SONY®

DIGITAL AUDIO RECORDER
PCM-7050/7030

PCM-7050

OPERATION MANUAL [English]
3rd Edition
Serial No. 30081 and Higher (PCM-7030, UC)
Serial No. 55671 and Higher (PCM-7030, EK)
Serial No. 30021 and Higher (PCM-7050, UC)
Serial No. 55121 and Higher (PCM-7050, EK)

For the customers in the USA

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warning — This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

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Preface—A Guide to the Effective Use of This Operation Manual

This operation manual will serve you as a guide for using the PCM-7050/7030 Digital Audio Recorder. General information necessary for the effective use of this manual is set forth below. We recommend that you first read through this preface so that you may use the manual most effectively depending on your experience in operating digital audio recorders.

Purpose of this manual

This manual contains all the information you need for the operation of the PCM-7050/7030 Digital Audio Recorder, including the terminology used for various component parts, details of settings, and operating procedures. It also explains the DABK series of interface options and introduces application systems which enable precise electronic editing. Furthermore, in case you have not used any DAT format tape, it has a section containing detailed information on the DAT format.

Besides this operation manual, a maintenance manual is also supplied for the unit. Refer to the maintenance manual for information on the internal circuits and controls of the unit.

Organization of this manual

There follows a brief summary of the chapters of this manual. The opening page of each chapter also gives a summary and a list of the contents of that chapter.

Chapter 1. Overview
Describes the principal features of the unit, and introduces an application system, associated equipment and optional accessories.

Chapter 2. Location and Function of Parts and Controls
Briefly explains the functions of and how to use the parts and controls located on the front and rear panels as well as the information appearing on the display. For experienced users of a professional digital audio recorder, a reading of this chapter, in conjunction with occasional reference to the other chapters, should be sufficient to start using the unit.

Chapter 3. Preparations
Covers the connections, initial settings, and power supply arrangement to be carried out beforehand. Also gives precautions to be observed and describes the DAT cassette to be used.

Chapter 4. Recording and Playback
Deals with the procedures for basic operations such as the recording and playback of audio signals. The procedures for using special features such as the sound memory and the chase synchronization function are also provided in this chapter.

Chapter 5. Menu Operations
Shows how to use the menus to set various data, to change the factory-set setup data, or to follow up the detection of an error.

Chapter 6. Application Systems
Describes how to connect the unit with other equipment, for example, digital audio equipment and a digital VTR to make up application systems capable of digital tape copying and editing and provides precautions to be taken in forming and using such application systems.

Chapter 7. Warning Indicators and Error Messages
Explains the warning indicators and the error messages displayed.

Appendix
● **Specifications and the DAT Format**
Gives the principal specifications of the unit and the DAT format.

Intended audience for this manual

The PCM-7050/7030 is designed for use principally at TV/radio broadcasting stations and post-production houses. This operation manual therefore assumes that the reader is more or less experienced in using broadcasting equipment.

If you are used to operating a DAT recorder or other broadcasting equipment, you will be able to use the unit, referring to appropriate sections of the manual as required after once reading through Chapter 2 "Location and Function of Parts and Controls". Regardless of experience, however, Chapter 1 "Overview" is essential reading, to ensure that you are aware of the features and functions of the unit.

If you are using this type of digital audio recorder for the first time, or have limited experience in its use, we recommend that you read through the entire manual.

Complementary information
Complementary information such as the definitions of some relatively new technical terms used in this manual are given as footnotes.

Referred information
This manual tells you, in italics, where to find additional information.

Notes
Precautions to be taken in using the unit are provided where appropriate under the heading of **Notes**. Be sure to read them as well as those set forth in Section 3-1 "Precautions" (page 3-1) so that you can obtain optimum performance with the unit.

Index
In addition to the table of contents and the opening page of each chapter outlining the chapter contents, you can use the index at the end of this manual to quickly locate necessary information contained in the manual.

Illustrations and photos
Illustrations and photos used in this manual are those of the PCM-7050. The PCM-7030 is almost the same as the PCM-7050 however. Wherever any operation procedures or other instructions are different, this manual describes the differences clearly.

Chapter 1. Overview

This chapter will describe the principal features and functions of the PCM-7050/7030 Digital Audio Recorder to give you an overview of the unit. An example of a digital audio editing system configured around the PCM-7050/7030 will also be shown in this chapter. We recommend that you read through this chapter regardless of how well you are experienced in using audio recording systems for TV/radio broadcasting stations.

1-1. Principal Features

1-1-1. General

The PCM-7050/7030 is a digital audio recorder conforming to the DAT (digital audio tape) format. It has a wide range of functions designed to meet the requirements of applications at TV/radio broadcasting stations and production houses. You can expand or enhance its functions or the functions of a system configured around it by adding optional accessories.

1-1-2. Features

Electronic editing

You can carry out automatic electronic editing using two PCM-7050 units together or using one PCM-7030 and one PCM-7050 with the RM-D7300 Digital Audio Editor (optional). If you mount the PCM-7050 units with the DABK-7055 Edit Memory option, you can store the sound around a selected edit point on the built-in sound memory. This feature enables you to rehearse editing by playing back the sound memory (memory rehearsal), without running the tape, and to set edit points precisely, resulting in higher editing efficiency and quality with high precision.

Chase synchronization function based on time code

The PCM-7050/7030 can be locked to an external time code. Adding the DABK-7030 Time Code Reader/Generator option (needed to input/output time code), you can synchronize the PCM-7050/7030 with video equipment.

Memory start function

Mounting with the DABK-7032 Memory Start option (for PCM-7030) and the built-in sound memory (for PCM-7050) makes it possible for you to start hearing sound at the instant you press the PLAY key (memory start).
You can also use this function to cue the tape precisely and easily.

4-head drum

Equipped with a 4-head drum, the PCM-7050/7030 can play back sound immediately after recording — RAW (Read After Write) function. Therefore, while you record sound, you can monitor its playback.
The PCM-7050/7030 can also record sound immediately after playing —RMW (Read Modify Write) function. Therefore, while playing sound, you can record an input sound after the monitored sound, while inserting cross-fading.

Recording and reproduction of time code

The tape used for the PCM-7050/7030 has subcode areas where you can record or read SMPTE/EBU time code.

Compatibility with consumer DAT recorders

Since the basic PCM-7050/7030 tape format is identical with that of consumer DAT recorders, the basic functions of the unit are compatible with those of all consumer DAT recorders.

ID function

The PCM-7050/7030 has an ID code function peculiar to DATs. The use of a Start ID, for example, makes it possible to carry out a high-speed search operation.

Search functions

The PCM-7050/7030 offers flexible search functions which include time code location, Start-ID location, End ID location, program number location, and cuing (search performed while hearing the playback sound).

Adoption of search dial

The PCM-7050/7030 has a versatile search dial. You can use it to perform dial menu operations to set or change the data to be displayed, to reproduce sound from the sound memory (PCM-7050: built-in, PCM-7030: when installing the DABK-7032 Memory Start option) in jog mode, or to cue the tape to a specific position.

Variable-speed playback

You can vary the playback speed arbitrarily within a range of ±12.5 percent of normal playback speed.

Front loading

The loading port of the cassette compartment is located on the front panel, so that you can load and take out a cassette with ease. The cassette is visible through the port.

A wide range of interfaces for remote control

You can use any of the four types of interface for remote control: a 37-pin parallel remote connector, a 9-pin serial remote connector, an 8-pin parallel remote connector, and an optional RS-232C computer interface connector.

Extensive options to realize diverse applications

Extensive options including digital audio editors and a variety of circuit boards are available so that you can set up a system capable of realizing a wide range of applications (such as an editing system for post production, a program transmission system at broadcast stations, etc.).

1-2. System Configuration Example

A digital audio editing system incorporating the PCM-7050 as a recorder, the PCM-7030 Digital Audio Recorder as a player, and the RM-D7300 Digital Audio Editor is shown below.

See Chapter 3 and subsequent sections on how to mount, connect, or use optional accessories.
For information on other equipment to be connected to the PCM-7050/7030, refer to the operation and installation manuals for the equipment.

Player		Recorder
DABK-7030 Time Code Reader/Generator option		DABK-7030 Time Code Reader/Generator option
DABK-7031 Digital I/O option		DABK-7055 Edit Memory option
PCM-7030 Digital Audio Recorder		PCM-7050 Digital Audio Recorder
	Editing controller	
	RM-D7300 Digital Audio Editor	
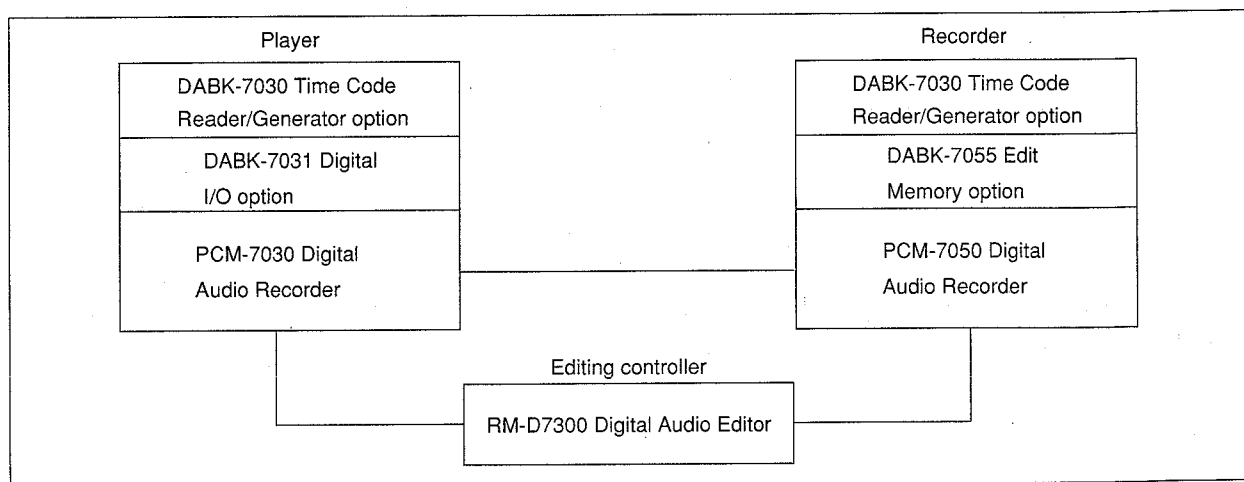
Configuration of an editing system

1-3. Recommended Equipment and Optional Accessories

PCM-7010 Digital Audio Recorder

The PCM-7010 is the most simply structured model in the PCM-7000 series of digital audio recorders. It is suitable for use as a recorder or a transmitter.

RM-D7300 Digital Audio Editor

In a digital audio editing system incorporating the PCM-7050 Digital Audio Recorder as a recorder and the PCM-7030 Digital Audio Recorder as a player, the RM-D7300 can control the recorder and the player to carry out precise electronic editing. You can also build a simplified editing system by combining the RM-D7300 with a pair of PCM-7030 Digital Audio Recorders.

RM-D7100 Remote Control Unit

This is a compact remote control unit connectable to the 37-pin parallel remote interface of any model of the PCM-7000 series digital audio recorders.

DABK-7030 Time Code Reader/Generator option

The DABK-7030 consists of a circuit board and a connector panel which you can use in the PCM-7050/7030 Digital Audio Recorder. When mounted with this option, the PCM-7050/7030 can input or output SMPTE/EBU time code. The recording format of SMPTE/EBU time code is used worldwide as a standard time code recording format for professional DATs. This option also enables the PCM-7050/7030 to operate in synchronization with other video equipment.

DABK-7031 Digital I/O option

This is an optional board, designed for use with the PCM-7030 Digital Audio Recorder. Installing this board allows the PCM-7030 to input/output the AES/EBU format (IEC 958) digital audio signals. The board also provides the word sync input/output connectors for synchronizing the PCM-7030 with other digital audio equipment.

DABK-7032 Memory Start option

This is an optional board, designed for use with the PCM-7030 Digital Audio Recorder. Installing this board provides the PCM-7030 with a memory start function and memory jog function.

DABK-7055 Edit Memory option

Designed specifically for use in the PCM-7050 Digital Audio Recorder. When mounted with this option, the PCM-7050 can carry out memory rehearsal to realize an editing precision of 1 millisecond under the control of the RM-D7300 Digital Audio Editor.
This edit memory option enables editing using cross-fading at edit points.

DABK-7033 Computer Interface (RS-232C) option

The DABK-7033 consists of a circuit board and a connector used to connect the PCM-7050/7030 Digital Audio Recorder to a computer via the RS-232C computer interface. The PCM-7050/7030 mounted with this option can be remote-controlled from a computer to perform automatic recording and playback.

RMM-30 Rack Mount Rail

A pair of rack mount rails used to mount the PCM-7000 series digital audio recorder on a 19-inch EIA standard rack.

RMM-31 Rack Mount Adapter

A pair of handles attached to the PCM-7000 series digital audio recorder to be mounted on a 19-inch EIA standard rack.

PDP-30 (30 min.), PDP-46 (46 min.), PDP-60 (60 min.), PDP-90 (90 min.), PDP-120 (120 min.) Digital Audio Tape

DAT format cassette tapes for professional use.

DT-10CL Cleaning Tape

Used to clean the heads.

Chapter 2. Location and Function of Parts and Controls

This chapter briefly explains the functions of and how to use the parts and controls located on the front and rear panels of the PCM-7050/7030 Digital Audio Recorder and the information that may appear on its display area.

If you are used to operating broadcasting equipment, you will be able to start using the unit after reading this chapter. If you have not used any digital audio recorder, read through this chapter to grasp an outline of the unit and familiarize yourself with the names of its parts and controls.

Subsequently, you can refer to this chapter to make sure of the available functions.

1 HEADPHONES connector section

2 REMOTE (9P)/LOCAL selector

3 POWER switch

4 EJECT key

5 Cassette compartment

6 Tape transport control keys

7 Display

8 DISPLAY select key

9 SYNC signal selector

10 AUDIO INPUT selector

11 SAMPLING FREQ selector

12 ANALOG AUDIO INPUT level controls

1 HEADPHONES connector section
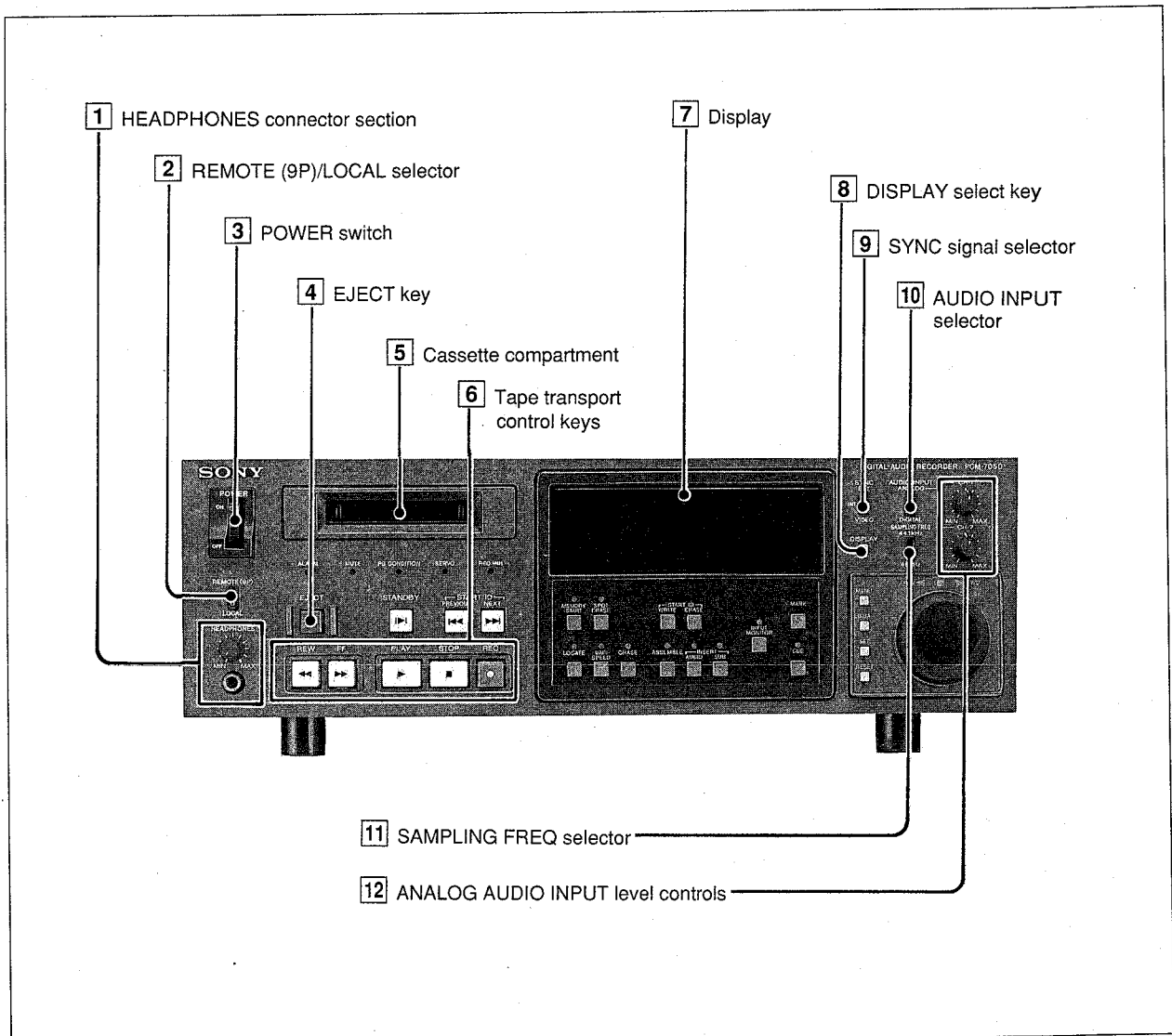
❶ HEADPHONES level control
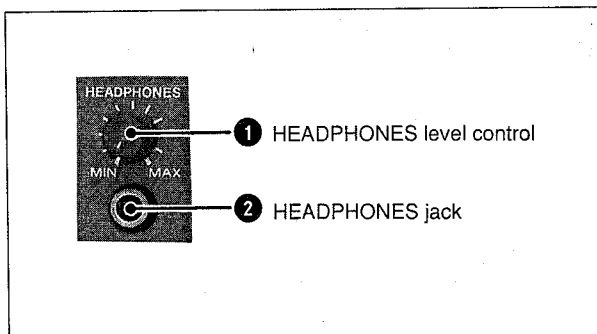
❷ HEADPHONES jack

❶ HEADPHONES level control
Adjusts the sound volume of the stereo headphones connected to the HEADPHONES jack ❷.

❷ HEADPHONES jack
Accepts a pair of stereo headphones.

② REMOTE (9P)/LOCAL selector

Set this selector to control the unit remotely or locally.

LOCAL: You can control the unit using the keys on the front panel. It is also possible to control the unit from the equipment connected to the REMOTE (8P) and REMOTE (37P) connectors as well as the optional RS-232C connector (DABK-7033 RS-232C I/F option scheduled to be released shortly) located on the connector panel.

REMOTE: You can control the unit only from the controller, such as a digital audio editor, connected to the REMOTE (9P) connector on the connector panel.

③ POWER switch

ON: Turns on the main power of the unit.

OFF: Turns off the main power of the unit.

④ EJECT key

Press to eject the cassette from the cassette compartment ⑤. This key stays lit while the cassette is being ejected.

⑤ Cassette compartment

Insert a cassette.

⑥ Tape transport control keys
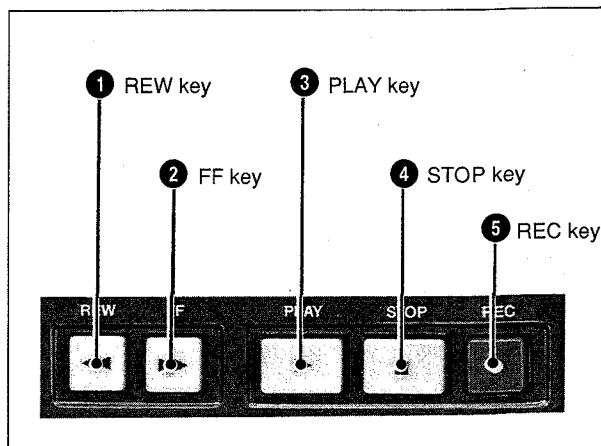
❶ REW (rewind) key

When pressed, lights and causes the tape to be rewound rapidly. If a time code is recorded on the tape, it is displayed in the tape time display area of the display while the tape is being rewound.

❷ FF (fast forward) key

When pressed, lights and causes the tape to be wound rapidly. If a time code is recorded on the tape, it is displayed in the tape time display area of the display while the tape is being wound.

❸ PLAY key

When pressed, lights and causes playback to start.

❹ STOP key

When pressed, lights and causes the running tape to stop. This key takes priority over all other tape transport control keys.

❺ REC (record) key

When pressed together with the PLAY key ❸, lights and causes recording to start. The PLAY key also stays lit during recording.

7 Display

Displays information such as time codes, audio signal levels, and various settings.

See Section 2-2 "Display" (page 2-8) for more information.

8 DISPLAY select key

Use this key to change the DISPLAY key menu selection. Every time you press this key, the data shown in the input/set data display area of the display changes.

See Section 5-2 "DISPLAY Key Menu Operations" (page 5-13) for more information.

9 SYNC signal selector

Selects a synchronizing signal (synchronization mode).

EXT: External synchronization (word sync) mode is selected. In this mode, the word synchronizing (sync) signal input to the WORD SYNC INPUT connector or the digital audio signal (called the D-I sync signal in this manual) input to the DIGITAL INPUT connector is used as the reference signal.

INT: Internal synchronization mode is selected. In this mode, the internal master clock is used as the reference signal.

VIDEO: External video synchronization mode is selected. In this mode, the video synchronizing (sync) signal input to the REF VIDEO INPUT connector (DABK-7030 Time Code Reader/ Generator option) is used as the reference signal.

If no external synchronizing signal is input while this selector is set to EXT or VIDEO, the internal master clock is selected automatically.

10 AUDIO INPUT selector

Selects analog or digital audio input signals.

ANALOG: Analog audio input signals are selected.

DIGITAL: Digital audio input signals are selected.

11 SAMPLING FREQ (frequency) selector

Sets the sampling frequency for recording.

44.1kHz: The sampling frequency is set to 44.1 kHz.

48kHz: The sampling frequency is set to 48 kHz.

When using a recorded tape, set the sampling frequency given by the tape ID.

12 ANALOG AUDIO INPUT level controls

Adjust the levels of the analog audio input signals for channel 1 and channel 2, when the AUDIO INPUT selector 10 is set to ANALOG. The center position of each control corresponds to the reference level.

CH-1: Adjusts the level of channel 1.

CH-2: Adjusts the level of channel 2.

15 MEMORY START key and indicator

16 SPOT ERASE key and indicator

17 MARK key

18 Tape direction lamps

19 Search dial

13 Warning indicators

14 STANDBY key

27 START ID keys

26 LOCATE key and indicator

25 VARI SPEED key and indicator

24 CHASE key and indicator

20 Dial menu keys

21 CUE mode key and indicator

22 INPUT MONITOR key and indicator

23 Record mode select keys and indicators

[13] Warning indicators

- ❶ ALARM indicator
- ❷ MUTE indicator
- ❸ PB CONDITION indicator
- ❹ SERVO lock indicator
- ❺ REC INH indicator

❶ ALARM indicator (red)

When an error is detected, this indicator lights and the corresponding error number appears on the display. If the error is a serious one, the tape will stop running.

See Section 7-1-2 "When the ALARM Indicator Comes On" (page 7-1) for more information.

❷ MUTE indicator (red)

Lights if playback is muted due to poor playback conditions.

❸ PB (playback) CONDITION indicator (yellow)

Lights if the error rate goes high due to poor playback conditions. If this indicator lights, inspect the tape as well as the tape transport section of the unit.
Using a dial menu, you can change the conditions under which this indicator lights.

See the section on "Pb cond (PB CONDITION)" (page 5-93) in "5-3-3 Setup Menu".

❹ SERVO lock indicator (green)

Lights when the servo system is locked or when chase synchronization is achieved.

❺ REC INH (record inhibit) indicator (yellow)

Lights when a cassette with its hole open (record inhibit setting) is loaded in the cassette compartment.

[14] STANDBY key

When pressed while its light is off, lights and causes the unit to go into the STANDBY ON state (the head drum rotates while the tape stops). The unit can start playback more quickly in the STANDBY ON state than in the STANDBY OFF state. If you leave the unit in the STANDBY ON state, the state will automatically go off after about 3 minutes, causing this key light to go out and the drum to stop rotating. If you want to enter the STANDBY ON state again, press the key again.

[15] MEMORY START key and indicator (PCM-7030: effective when the optional DABK-7032 is installed)

Used to store the initial portion of sound to be played back on the built-in sound memory, so that you can start playing back instantaneously (memory start).

See Section 4-3-3 "Outputting Playback Signals Immediately after Pressing the PLAY key — Memory Start Function" (page 4-50) for the procedure for making a memory start.

[16] SPOT ERASE key and indicator (Only for PCM-7050)

Used to partially erase the audio signal recorded on a tape (spot erase). Spot erase uses the sound memory. You can spot erase when the INSERT AUDIO indicator is [23] lit.

See Section 4-3-4 "Eliminating Noise — Spot Erase" (page 4-55) for the procedure for spot erase.

17 MARK key

Has the following functions:
- Setting a locate point
  When this key is pressed, the time code currently displayed in the tape time display area is set as a locate point and it appears in the input/set data display area.
- Setting an IN or OUT point
  When an IN or OUT point appears in the input/set data display area and this key is pressed, a locate point currently set is set as an IN or OUT point.
- Setting a playback starting point when making a memory start (for the PCM-7030, this function is available when the optional DABK-7032 is installed.)
- Specifying the recorded portion to be erased on a tape when performing spot erase (only for PCM-7050)

18 Tape direction lamps

These lamps indicate the direction of the tape running in CUE mode.

REV ◁: Lights green when the tape is run backward.

□: Lights yellow when the tape is temporarily stopped (pause). After about 10 seconds, the unit automatically releases the tape from the pause so as not to damage the tape.

FWD ▷: Lights green when the tape is run forward.

19 Search dial

Use this dial for three operations: memory jog, (for the PCM-7030, this function is available when the optional DABK-7032 is installed) dial menu setting, and cuing.

20 Dial menu keys

Use these four keys (MENU, DATA, SET, and RESET keys) together with the search dial 19 to set various modes or to change the information to be displayed.

See Chapter 5 "Menu Operations" for more information.

21 CUE mode key and indicator

Pressing this key causes the indicator to light and the search dial 19 go into CUE mode. Turning the search dial in CUE mode causes the tape speed to vary, according to the angle and direction of search dial rotation. The tape speed varies in 7 stages ranging from $1/5$ the normal speed to 16 times the normal speed in either direction. Since you can listen to the playback sound while adjusting the tape speed, you can locate (cue) the tape to a desired position efficiently.

22 INPUT MONITOR key and indicator

Use this key to switch the audio output signal selection between the playback signal and the input signal.

23 Record mode select keys and indicators

Use these keys to select a record mode. When you press any of these keys, the unit enters the corresponding record mode and the corresponding indicator lights. When none of these indicators is lit, you cannot record.
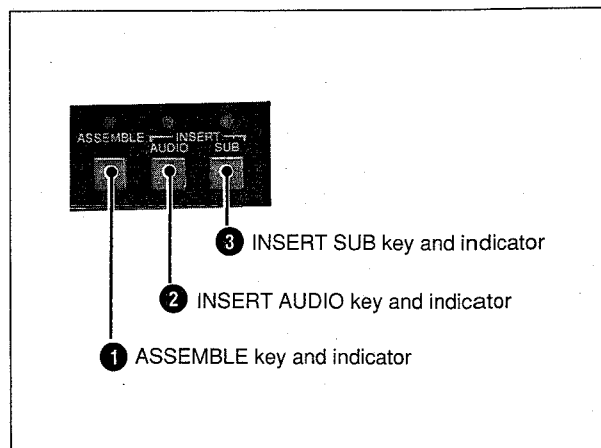
❸ INSERT SUB key and indicator

❷ INSERT AUDIO key and indicator

❶ ASSEMBLE key and indicator

❶ ASSEMBLE key and indicator
When this key is pressed, the indicator lights and the unit goes into ASSEMBLE mode. In ASSEMBLE mode, you can record audio signals as well as subcode data (Start ID, time code, etc.).

❷ INSERT AUDIO key and indicator
When this key is pressed, the indicator lights and the unit goes into INSERT AUDIO mode. In INSERT AUDIO mode, you can record only the audio signals (for insertion) on a tape.

❸ INSERT SUB (subcode) key and indicator
When this key is pressed, the indicator lights and the unit goes into INSERT SUB mode. In INSERT SUB mode, you can record only the subcode data (for insertion) on a tape.

24 CHASE (time code chase) key and indicator (Requires the DABK-7030 Time Code Reader/ Generator option.)
Use this key to run a tape, while keeping the off-tape time code synchronized with the input time code (chase synchronization). You can set the chase offset time using the search dial 19 to achieve chase synchronization with a fixed time difference between the two time codes. To release chase synchronization, press the STOP key 6 .

25 VARI (variable) SPEED key and indicator
Press this key to enter VARI SPEED playback mode. When the unit enters VARI SPEED playback mode, the indicator lights and you can then carry out variable-speed playback using the search dial 19 to vary the playback speed. To reset the mode, press this key again.

26 LOCATE key and indicator
Pressing this key causes the indicator to light and the tape to run to the position corresponding to the time code or the program number displayed in the input/set data display area of the display.

27 START ID keys
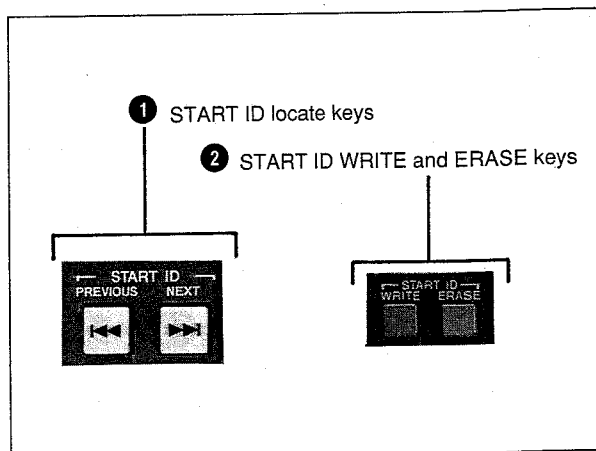
❶ START ID locate keys
Use these keys to run the tape to the next or last Start ID.
NEXT: Every time this key is pressed, the tape advances to the next Start ID rapidly. While the tape is being advanced, the LOCATE indicator 26 stays lit.
PREVIOUS: Every time this key is pressed, the tape is rewound to the last Start ID rapidly. While the tape is being rewound, the LOCATE indicator 26 stays lit.

❷ START ID WRITE and ERASE keys
Use these keys to write an ID as subcode data or to erase such an ID.
WRITE: Press this key to write an ID in ASSEMBLE or INSERT SUB mode. Select the ID to be written from the setup menu.
ERASE: Press this key to rewind the tape to the last ID and erase it in INSERT SUB mode. Select the ID to be erased from the setup menu.

For details of how to select the ID, see "Selecting the ID to be written/erased" (start ID/skip ID/end ID) — "id rEc" (ID REC) on page 5-62.

While the unit is on, the display shows information relevant to the current state of the unit. Refer to this section as required.

When you turn on the unit, the display will show initializing information for several seconds. Upon initialization, the basic display showing the factory settings will appear.

The following explains the basic display and the next section explains the "whole display" which covers all information that may be displayed.

Basic display
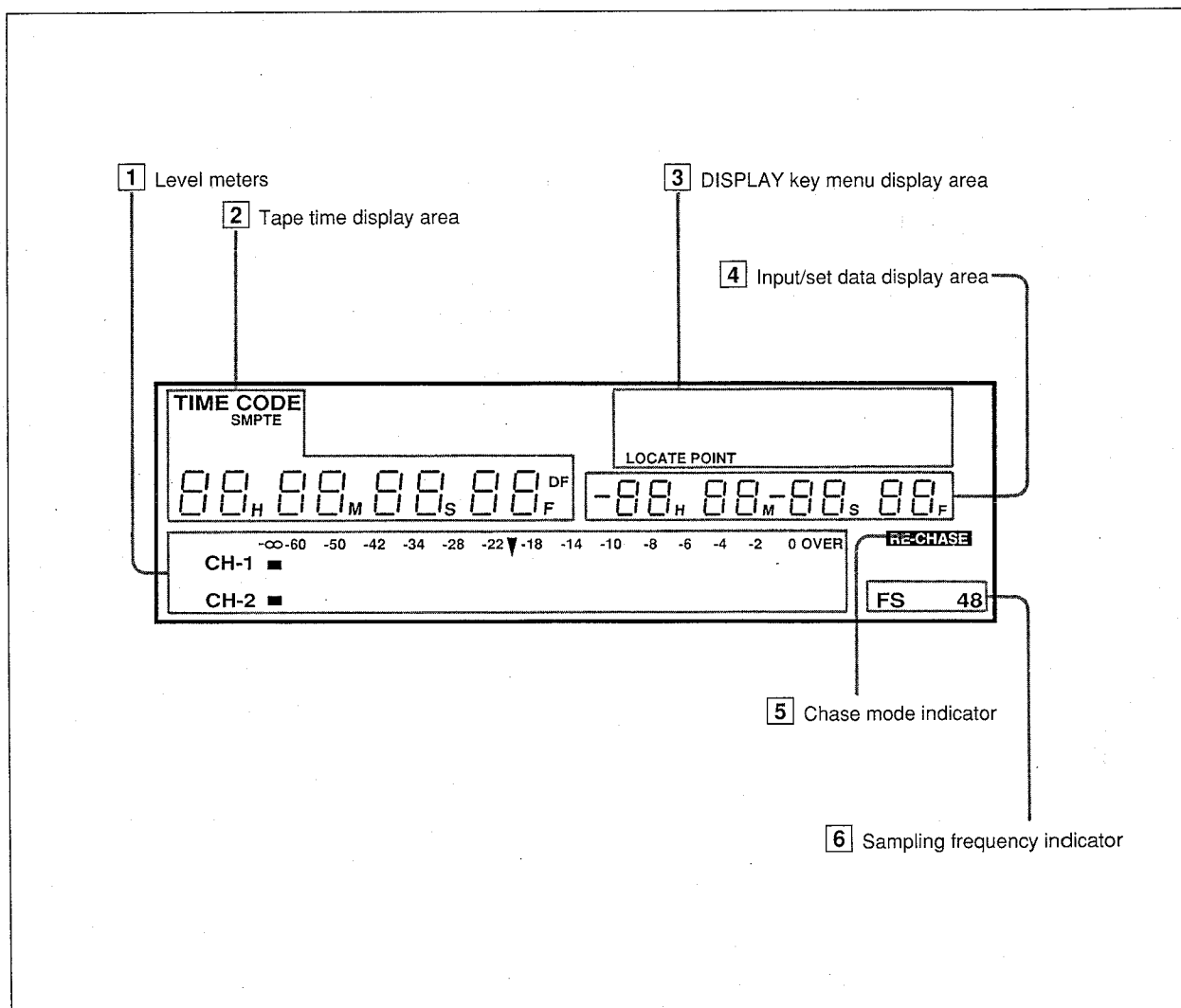
Basic display

[1] **Level meters**
Indicate the audio signal levels.

[2] **Tape time display area**
Shows the tape time or error messages. When the tape time displays, type of tape time (time code, absolute time, or counter time) is also indicated. As the time code that may be displayed in this area, the SMPTE time code (drop frame mode) has been factory selected for the model for the USA and Canada, and the EBU time code for the model for European countries. The type indication displayed for the SMPTE time code, drop frame mode, is "DF", and non-drop frame mode is indicated as "NDF".

[3] **DISPLAY key menu display area**
Shows the DISPLAY key menu selection. The initial selection is "LOCATE POINT". To change the selection, use the DISPLAY select key.

[4] **Input/set data display area**
Shows the data corresponding to the current DISPLAY key menu selection.

[5] **Chase mode indicator**
Shows the chase mode setting. The unit has been factory set to RE-CHASE ON (this indicator lights).

[6] **Sampling frequency indicator**
Shows the sampling frequency (44.1 kHz or 48 kHz).

Figures and alphabet shown in the display

Figures and characters (alphabet) appear as shown below in the tape time display area and input/set data display area.

Figure	1	2	3	4	5	6	7	8	9	0
Indication	l	ᴄ	ᴲ	ᴴ	�	ᴮ	�=	ᴮ	ᴾ	ᴼ

Alphabet	A	B	C	D	E	F	G	H	I	J	K*	L	M*	N
Indication	ᴴ	ᴮ	ᴄ	ᴰ	ᴱ	ᴲ	ᴳ	ᴴ	ᴵ	ᴶ		ᴸ		ᴺ

Alphabet	O	P	Q	R	S	T	U	V*	W*	X*	Y	Z*
Indication	ᴼ	ᴾ	ᴼ	ᴿ	ᴿ	ᵀ	ᵁ				ᵞ	

*This character does not appear.

Whole display

This section explains all the information that may appear in the display. (The information not included in the basic display mostly appears to indicate the results of control or operation performed on the unit. There cannot be a case in which all the information explained is displayed at a time.)

Tape time
display area

[1] Time code indication

[2] Start ID write/erase indication

[3] Sync signal indication

[4] Lock range indicator

[5] DISPLAY key menu display area

Input/set data
display area

TIME CODE	START ID	VIDEO	EXT SYNC		EXT TIME CODE	GEN SET
EBU SMPTE	WRITE ERASE	2529.9730	D-IWORD		GEN TIME CODE	U-BIT TIME
ABS TIME	AUTO REC	SYNC PB	WIDE		EXT U-BIT ELAPSE	GEN U-BIT
COUNTER				LOCATE POINT	CHASE OFFSET	VARI SPEED

Level meters

Chase mode
indicator

RE-CHASE
FREE RUN
EMPH
FS 44.148

[8] Time code mode indicator

Sampling frequency indicator

[7] Emphasis indicator

[6] Generator mode indicator

Whole display

2-10

1 Time code indication

TIME CODE: When a time code is recorded or reproduced, this indicator lights along with displaying "SMPTE" or "EBU" depending on the type of time code used.

See the section on "tc bASE (time code base)" (page 5-37) in Section 5-3-3 "Setup Menu" for the "ABS TIME" and "COUNTER" settings and indications.

2 Start ID write/erase indication

START ID WRITE: This indication appears when a Start ID is written to a tape.

START ID ERASE: This indication appears when a Start ID is erased from a tape.

AUTO REC: This indication appears when the automatic Start-ID writing mode is set for ASSEMBLE recording.

See the section on "S-id Auto (START ID AUTO REC)" (page 5-61) in Section 5-3-3 "Setup Menu" for the procedure on setting the automatic Start-ID writing mode.

When a Start ID is read from a tape during playback, "START ID" appears.

3 Sync signal indication

VIDEO: When the unit goes into the mode for video synchronization (when the SYNC signal selector is set to VIDEO with a DABK-7030 installed), this indication appears along with the frequency display "25", "29.97", or "30".

SYNC PB: This indication appears when playback is carried out under the following conditions:
1) The time code format is other than Film.
2) A video sync signal is input to the REF VIDEO INPUT connector (DABK-7030 Time Code Reader/Generator option) on the connector panel.
3) The setup menu "SYNC PB" is set to "ENABLE" to lock the off-tape time code and the input video sync signal in phase.

See the section on "SYncPb (SYNC PB)" (page 5-70) in Section 5-3-3 "Setup Menu".

EXT SYNC: When the unit goes into the mode for external synchronization (when the SYNC signal selector is set to EXT), this indication appears along with the display "D-I" (for a D-I sync signal in the AES/EBU format) (for the PCM-7030, effective only with DABK-7031 digital I/O option) or "WORD" (for a word sync signal) depending on the type of synchronizing signal used.

4 Lock range indicator

Indicates "WIDE" when the wide range is selected for external synchronization. (You do this by setting the setup menu "SYNC NARROW" to "OFF".) The factory setting of "SYNC NARROW" is "ON".

See the section on "SYnc nrr (SYNC NARROW)" (page 5-44) in Section 5-3-3 "Setup Menu".

5 DISPLAY key menu display area

Every time you press the DISPLAY key on the front panel, the DISPLAY key menu in the input/set data display area changes. The menus displayed and their functions are as follows:

See Section 5-2 "DISPLAY Key Menu Operations" (page 5-13) for more detailed information.

LOCATE POINT: This menu shows a locate point time code data.

LOCATE POINT (Program number): This menu shows the current Program number and the locate point Program number.

Pno: This menu shows a program number to be recorded with the start ID in assemble recording mode.

ELAPSE: This menu shows the tape running time.

U-BIT: This menu shows the user bit data read from the tape.

EXT TIME CODE: This menu shows the external time code being input.

EXT U-BIT: This menu shows the external user bit data being input.

GEN TIME CODE: This menu shows the time code generated by the built-in time code generator.

GEN U-BIT: This menu shows the user bit data generated by the built-in time code generator.

GEN SET TIME: This menu shows the initial value of the time code to be generated by the built-in time code generator.

GEN SET U-BIT: This menu shows the user bit data to be generated by the built-in time code generator.

VARI SPEED: This menu shows the tape speed for variable-speed playback (VARI-SPEED mode).

CHASE OFFSET: This menu shows the chase offset time.

rEno: This menu shows the initial value of the Program number when the unit is renumbering the Program numbers.

SHtL/JoG: This menu shows the cue speed when the unit is in cue mode.

6 Generator mode indicator

Displays "FREE RUN" when the generator mode is set to FREE RUN. (You do this by setting the setup menu "FREE RUN" to "ON".) The factory setting of "FREE RUN" is "OFF" (REC RUN).

7 Emphasis indicator

Displays "EMPH" while de-emphasis circuitry is being activated.

8 Time code mode indicator

When the SMPTE time code is used, this indicator displays "NDF" (for non-drop frame mode) or "DF" (for drop frame mode) depending on the mode of time code used. The factory setting is the drop frame mode. You can change the setting using a setup menu.

See the section on "rEF tcF (REFERENCE TIME CODE FORMAT)" (page 5-39) in Section 5-3-3 "Setup Menu" for the procedure for changing the settings.

3 ANALOG audio input/output section

4 DIGITAL audio input/output section (for PCM-7030: DABK-7031, optional)

5 WORD SYNC signal input/output section (for PCM-7030: DABK-7031, optional)

6 EXT SYNC selector (for PCM-7030: DABK-7031, optional)

7 TIME CODE input/output section (DABK-7030, optional)

8 REF VIDEO input section (DABK-7030, optional)

2 MONITOR output connectors

9 Power supply section

1 Remote control signal input/output section/Computer
interface section (DABK-7033, optional)

Connector panel mounted with DABK-7030 Time Code Reader/Generator option, and DABK-7031 digital I/O option (for PCM-7030, however PCM-7050 has this function) and DABK-7033 RS-232C I/F option

[1] Remote control signal input/output section (supplied)/Computer interface section (DABK-7033, optional)

❶ REMOTE (8P) connector

❷ REMOTE (37P) connector

❸ REMOTE (9P) connector

❹ RS-232C connector (DABK-7033, optional)
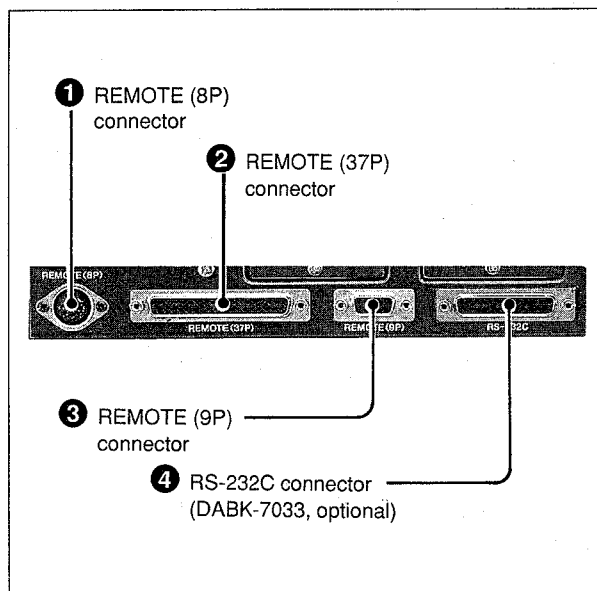
❶ REMOTE (8P) connector (DIN 8-pin)
This is an 8-pin parallel remote signal connector for connecting, for example, a fader.

Pin assignment of the REMOTE (8P) connector
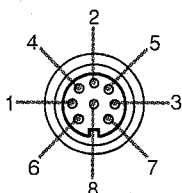
Pin number	Signal name
1	L-PLAY COMMAND IN*
2	L-STOP COMMAND IN
3	NC
4	L-PLAY STATUS OUT
5	L-STOP STATUS OUT
6	NC
7	+5V OUT
8	GND

* Can be changed to the PLAY/STOP COMMAND. For the method of changing the signal and other relevant information, contact a qualified Sony service technician.

- The electrical specifications of the IN and OUT signals for this connector are the same as those of the IN and OUT signals for the REMOTE (37P) connector ❷.

- The L-PLAY STATUS OUT signal for pin 4 and the L-STOP STATUS OUT signal for pin 5 are the same as the corresponding signals for the REMOTE (37P) connector ❷.
  For the function of each signal, see "Description of Signals" in " ❷ REMOTE (37P) connector".
- When the INPUT MONITOR key is set to monitor an input signal, the signal is automatically switched to the reproduced signal when a PLAY command is issued.

❷ REMOTE (37P) connector (D-SUB 37-pin)
This is a 37-pin parallel remote signal connector for connecting a remote controller such as the RM-D7100 remote controller.

Pin assignment of the REMOTE (37P) connector
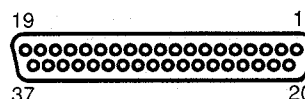
Pin number	Signal name	Pin number	Signal name
1	GND	20	GND
2	L-STOP STATUS OUT	21	L-STOP COMMAND IN
3	L-FF STATUS OUT	22	L-FF COMMAND IN
4	L-PLAY STATUS OUT	23	L-PLAY COMMAND IN
5	L-REW STATUS OUT	24	L-REW COMMAND IN
6	L-STANDBY STATUS OUT	25	L-STANDBY COMMAND IN
7	L-INPUT MONITOR STATUS OUT	26	L-INPUT MONITOR COMMAND IN
8	L-REC STATUS OUT	27	L-REC COMMAND IN
9	L-SEARCH STATUS OUT	28	L-ID NEXT COMMAND IN
10		29	L-ID PREVIOUS COMMAND IN
11	L-START ID STATUS OUT	30	L-START ID WRITE COMMAND IN
12	L-SKIP ID STATUS OUT	31	L-SKIP ID WRITE COMMAND IN
13	L-END ID STATUS OUT	32	L-END ID WRITE COMMAND IN
14	L-ALARM STATUS OUT	33	L-CHASE COMMAND IN
15	L-REVERSE COMMAND IN	34	
16	TAPE SPEED A COMMAND IN	35	
17	TAPE SPEED B COMMAND IN	36	L-EXT SOURCE SEL IN
18	L-SERVO LOCK ON STATUS OUT	37	EXT SOURCE (9.6 kHz ±12.5%) IN
19	+5V OUT		

Output L: 0.8 V or less (I max. 50 mA)
  H: Open collector (+5 V, 10 kilohm resistor pull-up)
Input L: 1.5 V or less, 50 msec. or more
  H: 3.5 V or more, 5.25 V or less
+5 V output: 0.4 A max.

The signals input to pin numbers 15, 16, 17 and 36 are HIGH or LOW. The signals input to or output from other pins are pulse signals.

Description of signals

The functions of the signals are as follows:

STOP: Stops the tape transport.

FF: Advances the tape rapidly.

PLAY: Plays back the tape.

REW: Rewinds the tape rapidly.

STANDBY: Keeps the head drum rotating while the tape is stopped.

INPUT MONITOR: Outputs the input audio signal instead of the playback signal.

REC: When issued together with the PLAY signal (by pressing the REC key and the PLAY key at a time), starts recording.

ID NEXT: Issued every time the START ID NEXT key is pressed and runs the tape to the next Start ID. For example, if you press the key 3 times in succession, the tape advances to the third ID counted from the current tape position.

ID PREVIOUS: Issued every time the START ID PREVIOUS key is pressed and rewinds the tape to the last Start ID. For example, if you press the key 3 times in succession, the tape rewinds to the third last Start ID counted from the current tape position.

SEARCH STATUS: Indicates that an ID or time code locate is being carried out. If the operation is for locating the next ID, the FF status signal is also issued. If it is for locating the last ID, the REW status signal is also issued.

START ID: Acts as a command to write a Start ID and also as a playback status signal.

SKIP ID: Acts as a command to write a Skip ID and also as a playback status signal.

END ID: Acts as a command to write an End ID and also as a playback status signal.

CHASE: Acts as a command to activate the chase synchronization function.

REVERSE, TAPE SPEED A, TAPE SPEED B: Control the tape speed for cuing. See "Tape speed control" set forth below. For status indication, the STOP + FF signal and the STOP + REW signal are used.

SERVO LOCK: Indicates the servo-locked status.

EXT SOURCE SEL: Activates the EXT SOURCE signal to control the playback speed in VARI-SPEED mode using an external synchronizer.
As long as this signal is kept at low level, the unit used as a recorder is controlled by the EXT SOURCE signal in VARI-SPEED mode.

EXT SOURCE: An external rectangular signal with a frequency of 9.6 kHz ±12.5% used to control the playback speed in VARI-SPEED mode.

ALARM: Outputs an alarm signal.

Tape speed control

The tape speed is determined by the combination of the L-REVERSE COMMAND IN signal for pin 15, TAPE SPEED A COMMAND IN signal for pin 16, and TAPE SPEED B COMMAND IN signal for pin 17 as indicated in the following table:

Pin 15 (REVERSE)	Pin 16 (SPEED A)	Pin 17 (SPEED B)	Tape speed
—	H	H	—
H	H	L	× 1
H	L	H	× 3
H	L	L	× 16
L	H	L	× −1
L	L	H	× −3
L	L	L	× −16

❸ REMOTE (9P) connector (D-SUB 9-pin)

This is a 9-pin serial remote signal connector for connecting, for example, the RM-D7300 Digital Audio Editor.

Pin assignment of the REMOTE (9P) connector and the corresponding input/output signals

A<B → "1" (MARK)
A>B → "0" (SPACE)
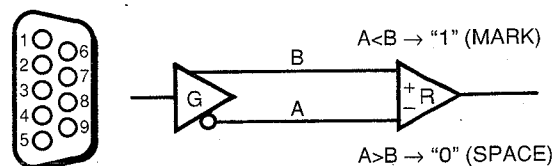
Pin number	Signal name
1	FRAME GROUND
2	TRANSMIT A
3	RECEIVE B
4	RECEIVE COMMON
5	SPARE
6	TRANSMIT COMMON
7	TRANSMIT B
8	RECEIVE A
9	FRAME GROUND

❹ RS-232C connector (DABK-7033, optional)
Connect to a computer via an RS-232C computer interface.

Pin assignment of the RS-232C connector and the corresponding input/output signals
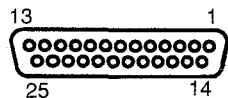
Pin number	Signal symbol	Signal name	Signal direction
1	FG	FRAME GROUND	—
2	TXD	TRANSMIT DATA	PCM-7050/ → External 7030 CPU
3	RXD	RECEIVE DATA	PCM-7050/ ← External 7030 CPU
4	RTS	REQUEST TO SEND	PCM-7050/ → External 7030 CPU
5	CTS	CLEAR TO SEND	PCM-7050/ ← External 7030 CPU
6	DSR	DATA SET READY	PCM-7050/ ← External 7030 CPU
20	DTR	DATA TERMINAL READY	PCM-7050/ ← External 7030 CPU
7	GND	SIGNAL GROUND	—

- All signals conform to the RS-232C standard.
- Their output levels are as follows:
    ON: +5 V or more   OFF: –5 V or less

2 MONITOR output connectors
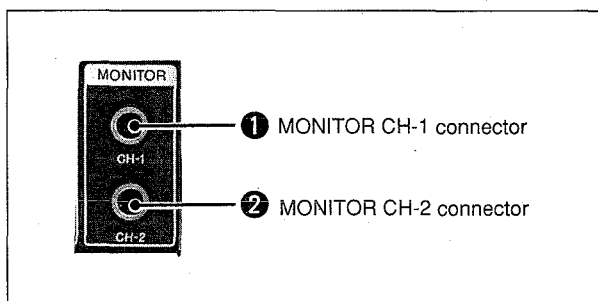
❶ MONITOR CH-1 (monitor output channel 1) connector
Outputs the channel 1 analog audio signal (L) for monitoring. The output signal of this connector is the same as that of the ANALOG OUTPUT CH-1 connector 3 ❷. It is an unbalanced output.

❷ MONITOR CH-2 (monitor output channel 2) connector
Outputs the channel 2 analog audio signal (R) for monitoring. The output signal of this connector is the same as that of the ANALOG OUTPUT CH-2 connector 3 ❷. It is an unbalanced output.

3 ANALOG audio input/output section
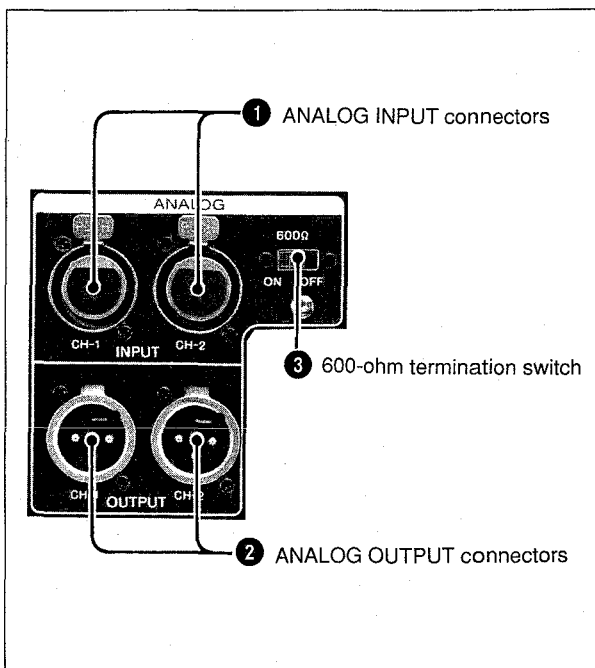
❶ ANALOG INPUT (analog audio input) connectors (equivalent to XLR type)
CH-1: Inputs the channel 1 analog audio signal (L).
CH-2: Inputs the channel 2 analog audio signal (R).

❷ ANALOG OUTPUT (analog audio output) connectors (equivalent to XLR type)
CH-1: Outputs the channel 1 analog audio signal (L).
CH-2: Outputs the channel 2 analog audio signal (R).

❸ 600-ohm termination switch

Sets the input impedance to 600 ohms or 10 kilohms.

ON: The analog audio input signals are terminated in 600 ohms.

OFF: High input impedance (10 kilohms) is set.

4 DIGITAL audio input/output section (for PCM-7030: DABK-7031, optional)

DIGITAL INPUT connector ❶

DIGITAL OUTPUT connector ❷
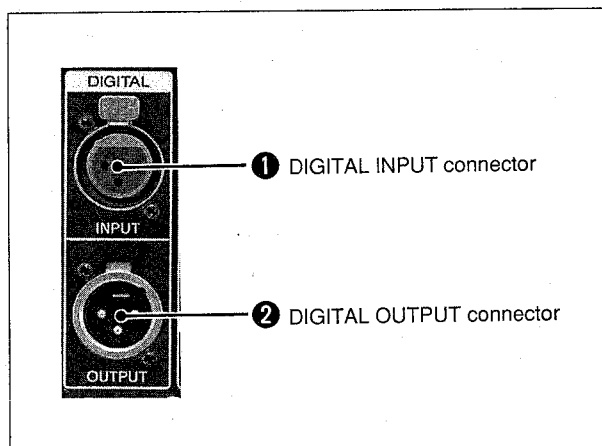
❶ DIGITAL INPUT (digital audio input) connector

Inputs digital audio signals in the AES/EBU format.

❷ DIGITAL OUTPUT (digital audio output) connector

Outputs digital audio signals in the AES/EBU format.

5 WORD SYNC signal input/output section (for PCM-7030: DABK-7031, optional)

❶ WORD SYNC INPUT connector

❷ 75-ohm termination switch

❸ WORD SYNC OUTPUT connector
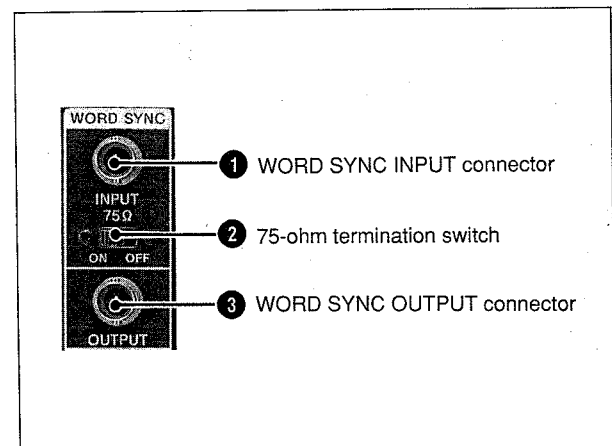
These connectors input or output a word sync signal to synchronize the unit with other digital audio equipment.

❶ WORD SYNC INPUT connector (BNC type)

Inputs an external word sync signal to synchronize the unit with other audio equipment.

❷ 75-ohm termination switch

ON: The input word sync signal is terminated in 75 ohms.

OFF: High input impedance is set so that the external word sync signal may be looped through to other equipment.

❸ WORD SYNC OUTPUT connector (BNC type)

Outputs the word sync signal of the unit to synchronize other audio equipment. When the EXT SYNC selector 6 is set to WORD in the external synchronization (word) mode, this connector directly outputs the signal input to the WORD SYNC INPUT connector.

6 EXT SYNC (external sync signal) selector (for PCM-7030: DABK-7031, optional)
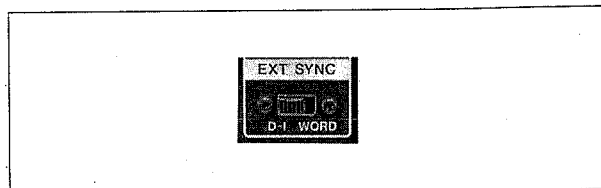
Selects the external synchronization signal to be used.

D-I (DIGITAL INPUT): The signal in the AES/EBU format (D-I sync signal) input to the DIGITAL INPUT connector 4 ❶ is selected.

WORD: The signal (word sync signal) input to the WORD SYNC INPUT connector 5 ❶ is selected.

7 TIME CODE input/output section (DABK-7030, optional)

1 TIME CODE INPUT connector

2 TIME CODE OUTPUT connector

3 Recording time code selector
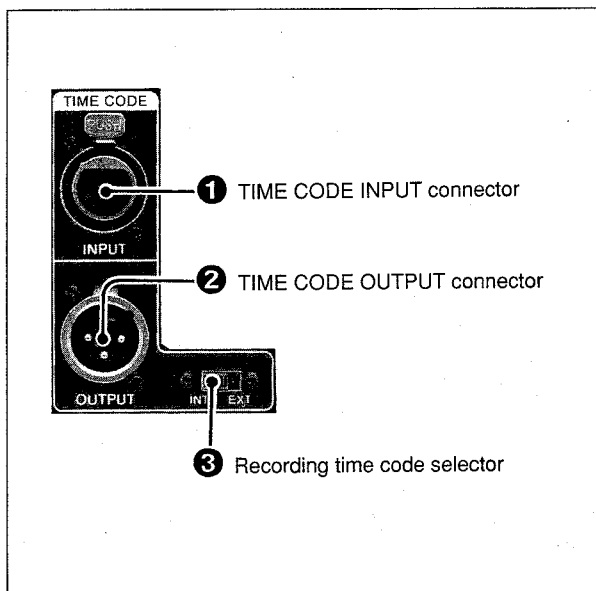
These optional connectors input or output the SMPTE/EBU time code.

1 TIME CODE INPUT connector
Inputs the SMPTE/EBU time code.

2 TIME CODE OUTPUT connector
Outputs the SMPTE/EBU time code.

3 Recording time code selector
Selects the time code to be recorded.
INT: The internally generated time code is selected.
EXT: The time code input to the TIME CODE INPUT connector is selected. When this setting is selected, "EXT" appears in the DISPLAY key menu display area of the display.

Note

The recording time code selector functions only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

For details, see the section on "rEc tc" (REC TIME CODE) in the explanation of the setup menu (page 5-42).

8 REF VIDEO (reference video signal) input section (DABK-7030, optional)

1 REF VIDEO INPUT connectors

2 75-ohm termination switch
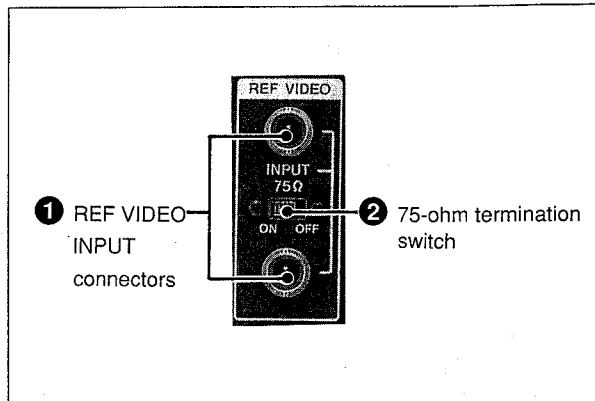
1 REF (reference) VIDEO INPUT connectors
These are a pair of loop-through connectors which input a video sync signal used to synchronize the unit with video equipment.

2 75-ohm termination switch
ON: The input signal is terminated in 75 ohms.
OFF: High input impedance is set so that the input signal may be looped through the two connectors for connection to other equipment.

9 Power supply section

1 VOLTAGE SELECTOR

2 ~ AC IN connector
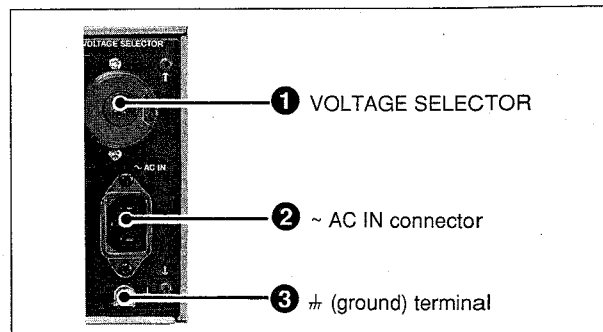
3 ⏚ (ground) terminal

1 VOLTAGE SELECTOR
Selects the AC power voltage according to the local power line voltage.

2 ~AC IN (AC power input) connector
Connect to an AC power source using the supplied AC power cord.

3 ⏚ (ground) terminal
Connect a grounding wire.

Chapter 3. Preparations

This chapter describes the information and procedure needed before
you start recording and playback. "Precautions" gives the safety
measures to take before operating the PCM-7050/7030, and
"Configuration Examples" covers from the basic connections of the
PCM-7050/7030 itself to connecting the unit to other equipment
which are mentioned in Section 1-2 "System Configuration Example"
(page 1-4). "Initial Settings" explains the needed operating settings
which don't require the resetting during normal operation.

3-1. Precautions

3-1-1. Use and Storage

Do not subject the unit to severe shocks; otherwise, the internal mechanism may be damaged, or the body distorted.

Use and storage locations

Store in a level, ventilated place. Avoid using or storing the unit in the following places:
- Where it is subject to extreme of temperature.
- Very damp places.
- Places subject to severe vibration.
- Near strong magnetic fields.
- In direct sunlight for extended periods, or close to heating apparatus.

Replacement of head drum and lithium battery

The head drum and the lithium battery used in the unit need to be replaced. To see the accumulated operation time of the head drum, choose "Hour-t (HOUR-TIME)" of the Setup menu.
When you replace the head drum, also replace the lithium battery for memory backup.

*For the replacement, refer to the maintenance manual of the ·
PCM-7050 or 7030 respectively or consult qualified Sony personnel.*

3-1-2. Condensation

If you move the unit suddenly from a very cold place to a warm place, or use it in a very damp location, condensation may form on the head drum. If the unit is operated in this state, the tape may adhere to the drum, and cause a failure or even permanent damage. Avoid operating the unit under the conditions described above.
If condensation forms on the head drum, error code "Error 2-70" appears on the display of the unit. In that case, leave the unit switched on until the error code disappears.

3-2. Configuration Examples

3-2-1. Precautions on Installation and Connections

- Before making any connections, be sure to turn the power of all equipment off.
- For details on connection and operation of each connected piece of equipment, refer to the installation and operation manual furnished with the equipment.

3-2-2. Basic Connections

This section describes how to connect the PCM-7050/7030 to other analog audio equipment to record and play back analog audio signals.
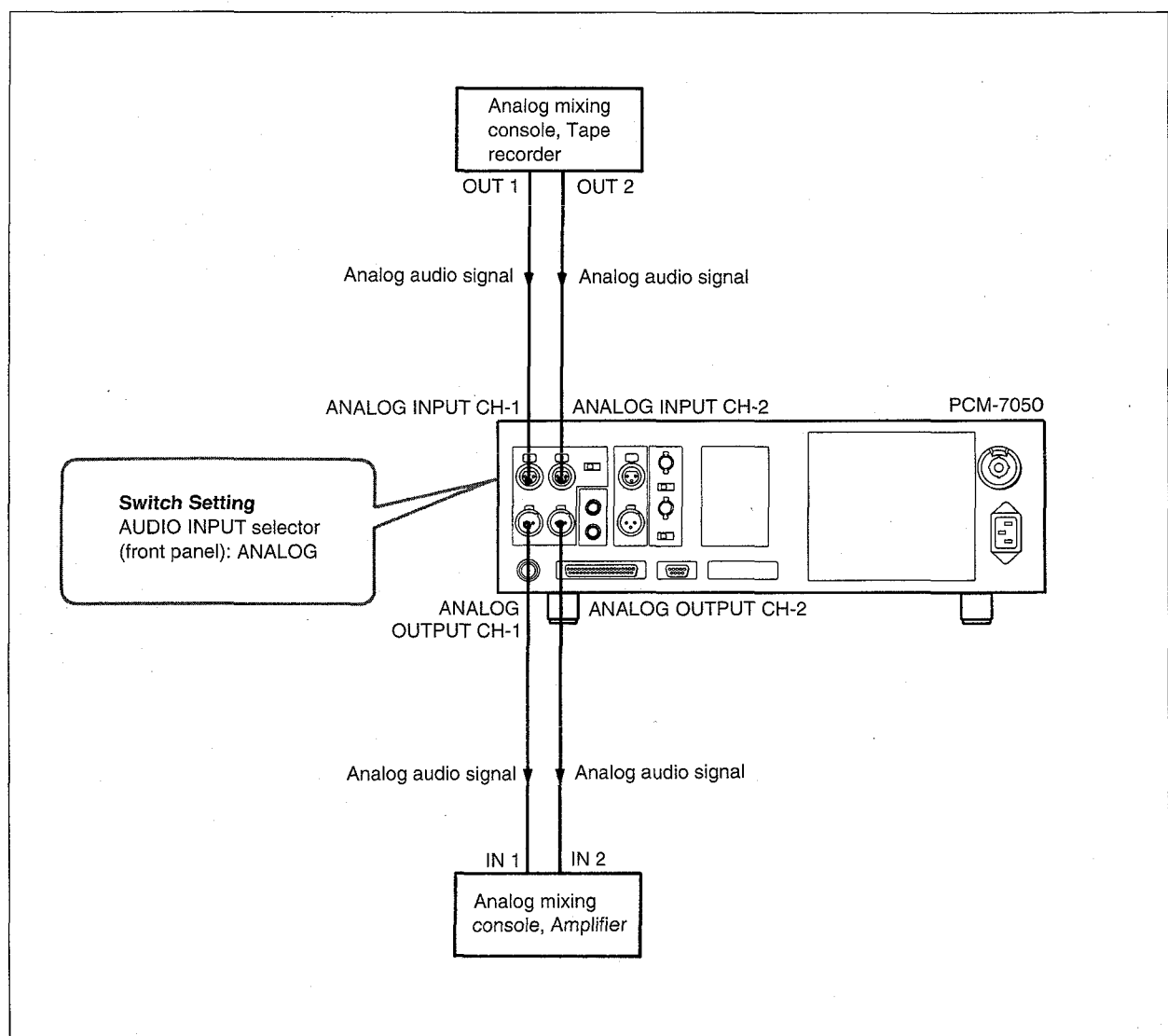
When DABK-7030 time code reader/generator option is installed

When the DABK-7030 is installed on the PCM-7050/7030, connect to other time code reader/generator as in the illustration below.
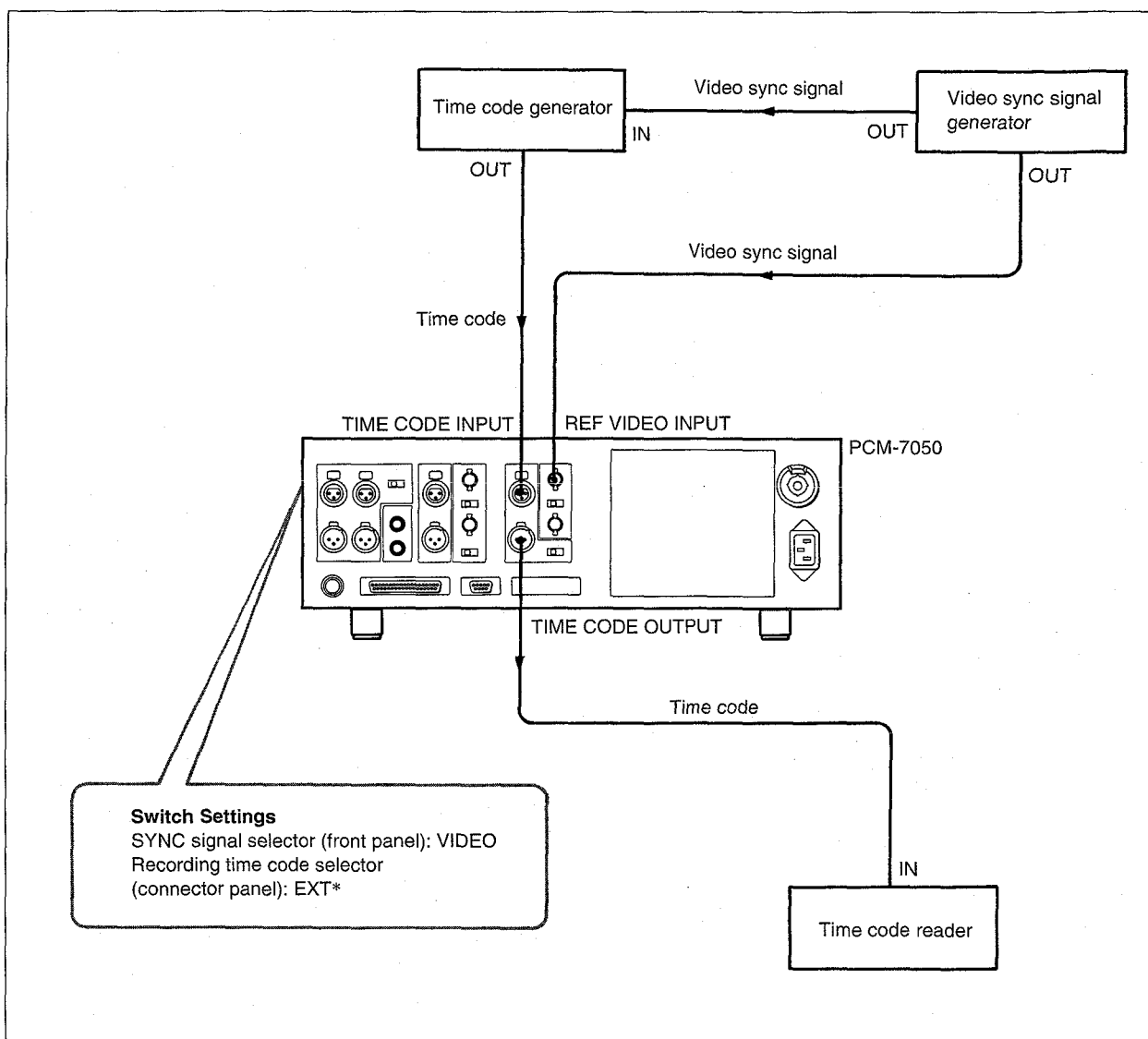
When DABK-7030 is installed

* The recording time code selector functions only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

Connection for digital copying

Connect as follows when you want to make digital copies (to input digital audio signal and copy the signal).
In the following example, the PCM-7050 is equipped with the DABK-7030, and the PCM-7030 with the DABK-7030 and the DABK-7031.

Example 1: When the recorder is a slave unit

Player (PCM-7050/7030, PCM-3402, etc.)

Switch Setting
SYNC signal selector (front panel): INT
INPUT MONITOR key (front panel): Turned off

DIGITAL OUTPUT
TIME CODE OUTPUT
WORD SYNC OUTPUT

Digital audio signal [1]
Time code [3]
Word sync signal [2]

WORD SYNC INPUT

Switch Settings
Audio input selector
(front panel): DIGITAL
SYNC signal selector
(front panel): EXT
INPUT MONITOR key
(front panel): Turned off
EXT SYNC signal selector
(Connector panel): D-I or WORD
Recording time code selector
(connector panel): EXT [3]

DIGITAL INPUT
TIME CODE INPUT

Recorder (PCM-7050)

Digital audio signal connection (1)

1) This signal is also used as the external sync signal (D-I sync signal).
2) When you set the EXT SYNC signal selector to WORD, this signal is required as the external sync signal. If the switch is set to D-I, then the connection is not necessary.
3) Make this connection and switch setting when you copy the time code. The recording time code selector functions only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

Example 2: When the recorder is a master unit

Switch Settings
SYNC signal selector (front panel): EXT
EXT SYNC signal selector (connector panel): D-I or WORD
INPUT MONITOR key (front panel): Turned off

Player (PCM-7050/7030, PCM-3402 etc.)

WORD SYNC INPUT

DIGITAL INPUT

DIGITAL OUTPUT

Digital audio signal [1]

Word sync signal [2]

Digital audio signal

DIGITAL INPUT

Switch Settings
SYNC signal selector (front panel): INT
AUDIO INPUT selector (front panel): DIGITAL
INPUT MONITOR key (front panel): Turned off
Recording time code selector (connector panel): INT(If you copy the time code, set to "EXT".) [3]

DIGITAL OUTPUT

WORD SYNC OUTPUT

Recorder (PCM-7050)

Digital audio signal connection (2)

1), 2) When the recorder is a master unit, signal either 1) or 2) is used as external sync signal.

3) The recording time code selector functions only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

Notes

● To make a digital copy with the time code and the audio signals in line with each other, set the "tc dLY"(time code delay) of a dial menu to "d out"(digital output).

For details, see the section on "tc dLY (TIME CODE DELAY)" (page 5-57) in Section 5-3-3 "Setup Menu".

● In digital copying between two PCM-7050/7030's or between a PCM-7050 and a PCM-7030, the unit doesn't copy the subcode signals such as Start ID or ABS TIME even if you follow the above setting. To copy subcode ID signals, follow one of the procedures below:

— First copy the audio signal and time code signal when the "tc dLY"(time code delay) is set to "d out" (digital output). Then write the subcode IDs in the INSERT mode.
— Make connections in the REMOTE (37P) connector as shown below, then you can copy Start ID, Skip ID, and End ID, as well as the audio signals and the time code signals simultaneously.
Note that in this digital copy, the copied ID signals are 1 to 3 frames behind the audio signals and the time code signals.

OUTPUT side		INTPUT side
START ID STATUS OUT (11)	↔	START ID WRITE COMMAND IN (30)
SKIP ID STATUS OUT (12)	↔	SKIP ID WRITE COMMAND IN (31)
END ID STATUS OUT (13)	↔	END ID WRITE COMMAND IN (32)

The number in ( ) refers to the pin number of the REMOTE (37P) connector.

Synchronizing with video equipment

Connect the units as in the illustration below to synchronize with the video equipment.
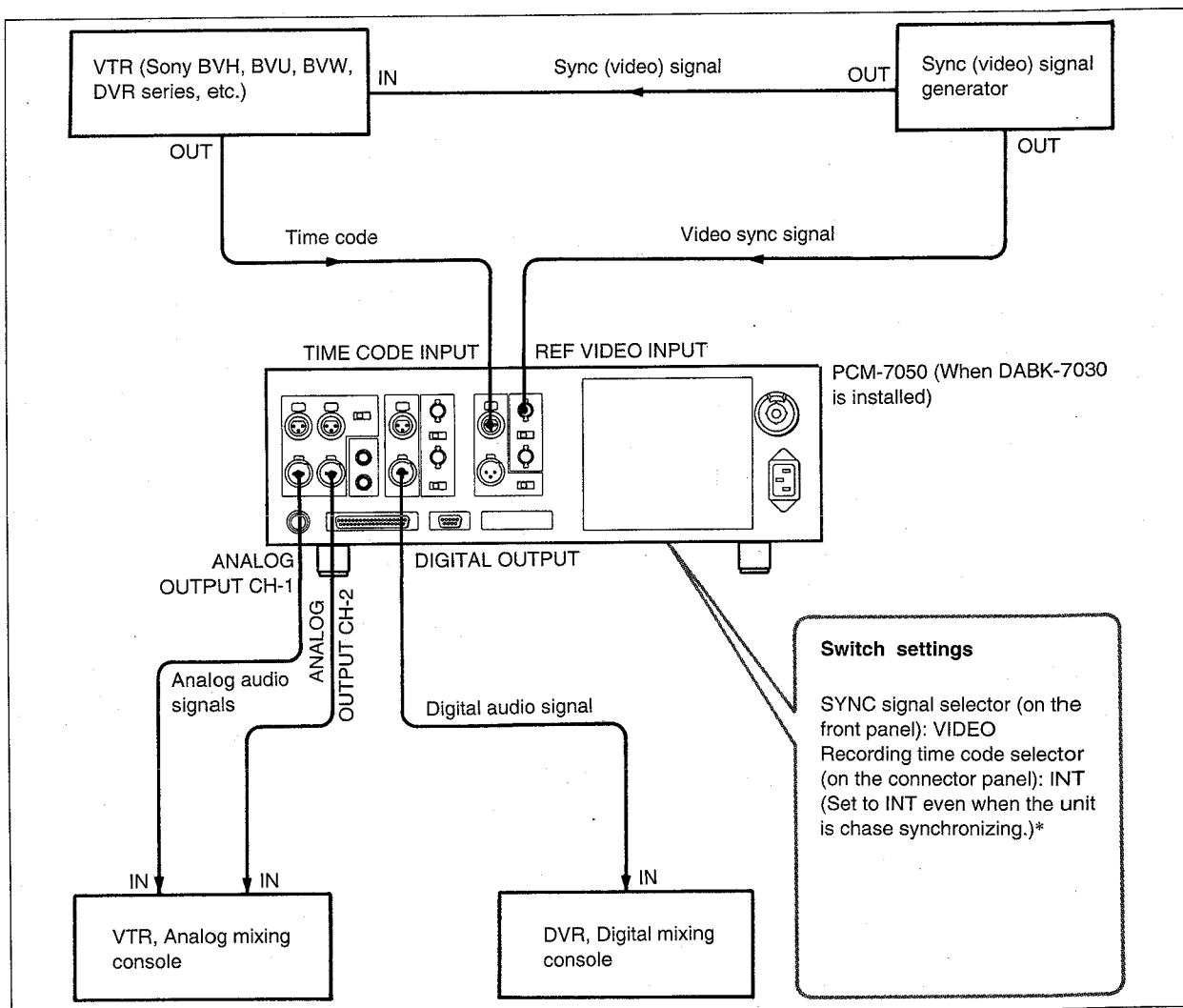
Connecting to the video equipment

* The recording time code selector functions only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

Note

When the playback time code is synchronized with the input video signal instead of with the time code in the Chase Synchronizing function, set the "SYncPb"(SYNC PB) in the Setup menu to "ENABLE".

For details, see the section on "SYncPb (SYNC PB)" (page 5-70).

3-7

Configuration for editing

The editing ability of the system works most efficiently when the PCM-7050 is used as a recorder, and the PCM-7030 is used as a player with the RM-D7300 Digital Audio Editor as an editing controller. A configuration example is shown below.
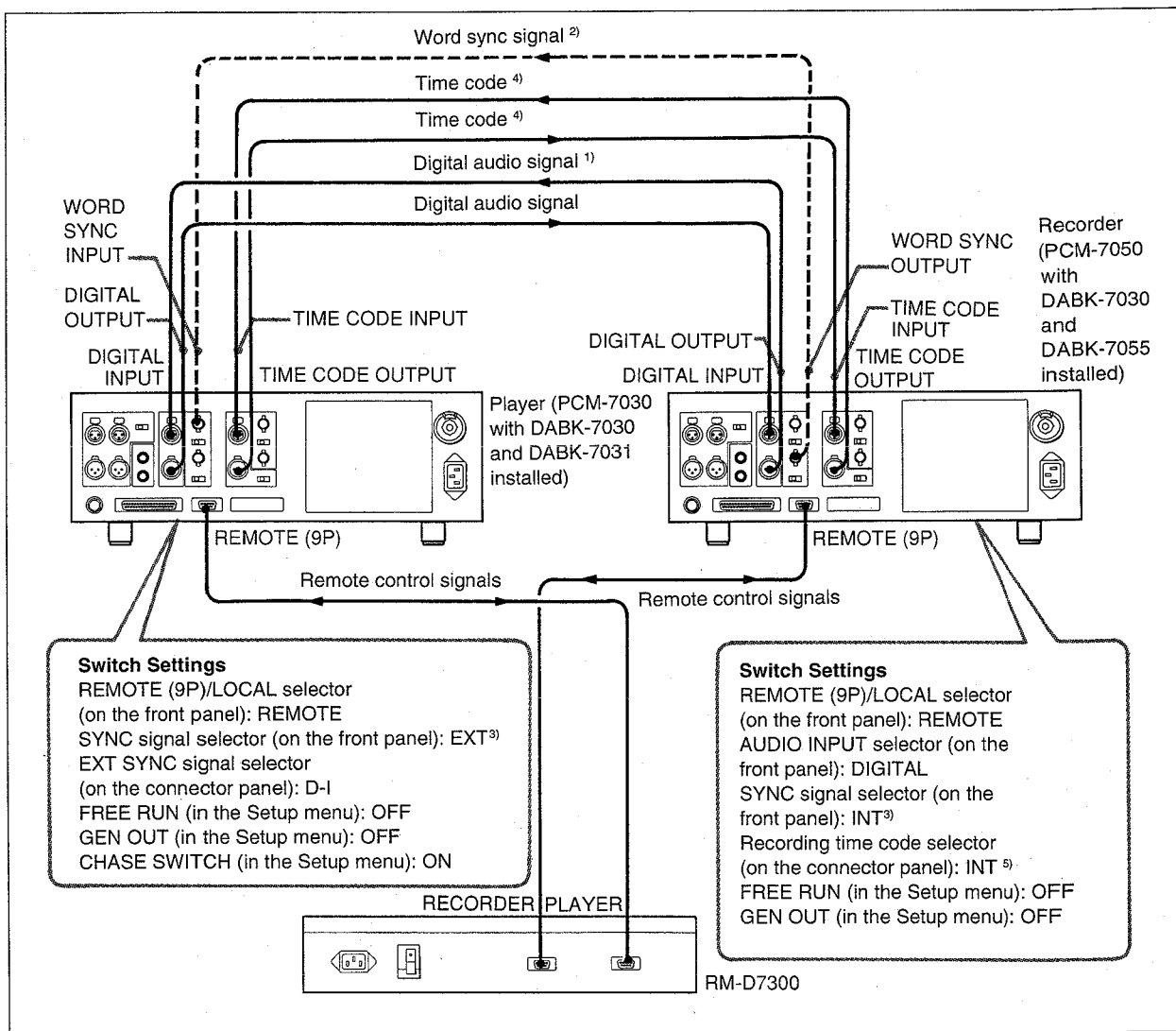
Connections for editing

1) This signal is used as the sync signal from the recorder to the player.
2) This signal can be a substitute for sync signal 1). When this signal is used, set the EXT SYNC signal selector of the player to "WORD".
3) Use the recorder as a master unit.
4) Connect time codes.
5) The recording time code selector is effective, only when "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL".

3-8

Checking the voltage setting
This unit is designed to operate on 100V, 120V, 220V, or 240V AC.
Before connecting the unit to the power source, check to see that its
operating voltage is identical with the local power line voltage. The
Voltage selector is located on the connector panel.
If the Voltage selector needs to be reset, follow the procedures below.

WARNING: Changing the voltage selector may require the use of a
different line cord or attachment plug, or both. To reduce the risk
of fire or electric shock, refer servicing to qualified service
personnel.
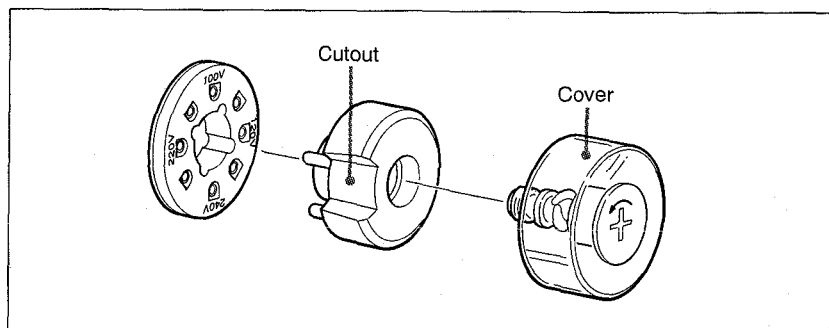
Resetting the voltage

1 Remove the voltage selector cover with a screwdriver.

2 Pull out the selector and re-insert it so that the correct voltage figue
appears through the cutout of the selector.

Supplying the power
Insert the plug of the supplied AC power cord into the AC IN
connector and to an AC outlet as shown in the illustration below.
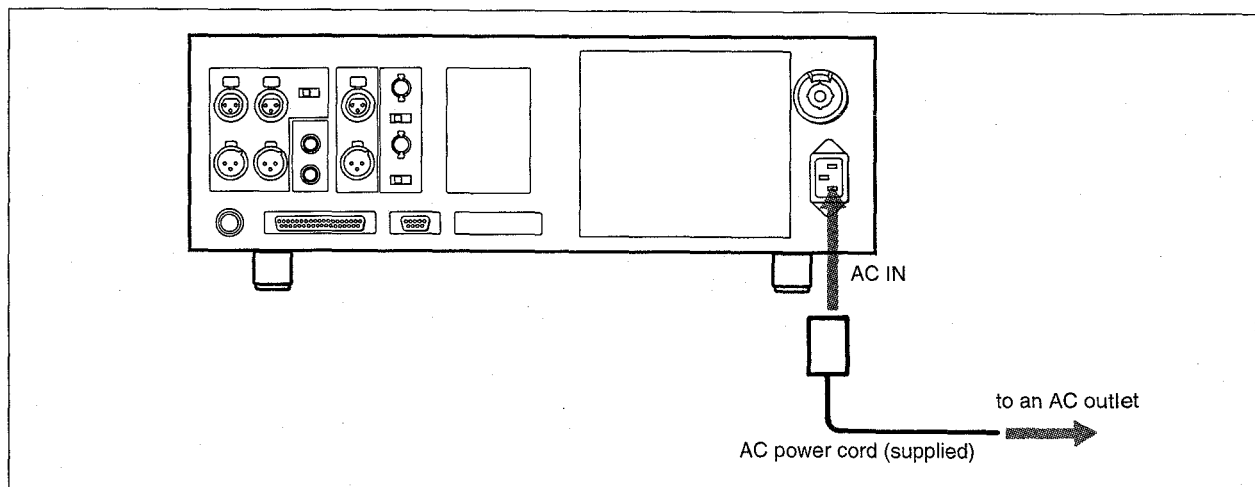
Power connection

This section describes the settings required before you start operating the PCM-7050/7030.

3-3-1. Selecting the Sampling Frequency

Select the sampling frequency for recording with the SAMPLING FREQ selector.
In the playback mode, the sampling frequency is automatically selected according to the sampling frequency of the tape ID.

SAMPLING FREQ
44.1kHz ◀─── Sets the sampling frequency to 44.1 kHz.

48kHz ◀─── Sets the sampling frequency to 48 kHz.
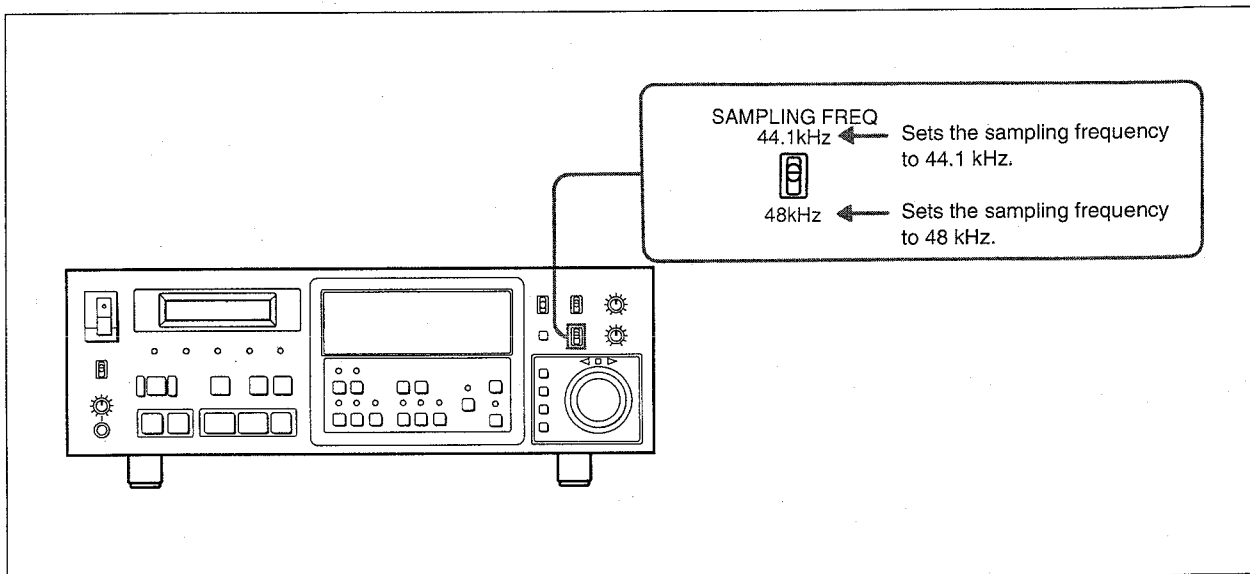
SAMPLING FREQ selector

Note

When you record on a pre-recorded tape, set the sampling frequency according to the ID on the tape. Even if the setting is different from that of the tape ID, the PCM-7050/7030 follows the sampling frequency on the tape.

To record on the recorded tape using the different sampling frequency
We recommend you avoid using two different sampling frequencies on a tape. Erase the old record first with the bulk eraser for metal tape before you record on the tape in a different sampling frequency.

Using the recorded tape without erasing the old record
In the cases below, the PCM-7050/7030 follows the sampling frequency setting on the unit even though it is different from that on the tape. That causes two different frequencies on a tape. Note that it might spoil the effect of the operation.

- **When there are some unrecorded parts on a tape**
  The sampling frequency of the unrecorded part can be changed with the SAMPLING FREQ selector on the unit.

- **During tape loading**
  After you insert a tape, there is a time interval of a few seconds before the unit reads the tape ID. Therefore, if you press the PLAY key while holding the REC key down before the STANDBY key is turned on, the sampling frequency of the PCM-7050/7030 follows the SAMPLING FREQ selector setting even if it is different from that of the tape ID.

The PCM-7050/7030 inputs either analog audio signals or digital audio signals. Select one of the two types of input signals with the AUDIO INPUT selector.

AUDIO INPUT
    ANALOG ◄── Selects the analog audio signal.

    DIGITAL ◄── Selects the digital audio signal.
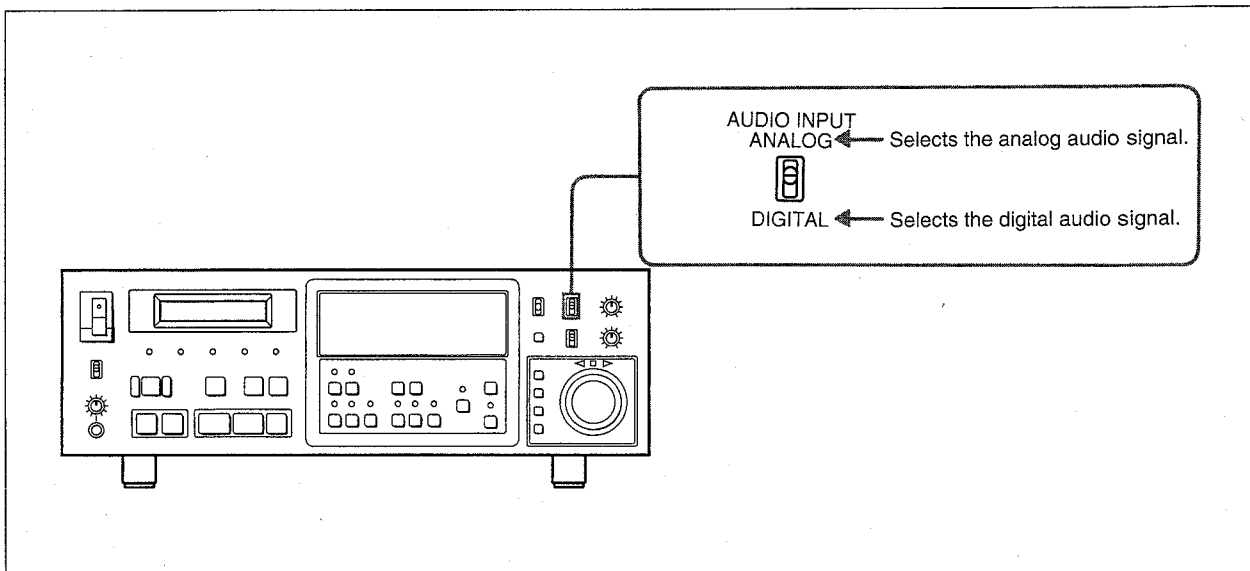
AUDIO INPUT selector

3-3-3. Selecting the Sync Signal

One of the following sync signals is required in synchronized operation. Select the appropriate signal with the SYNC signal selector.
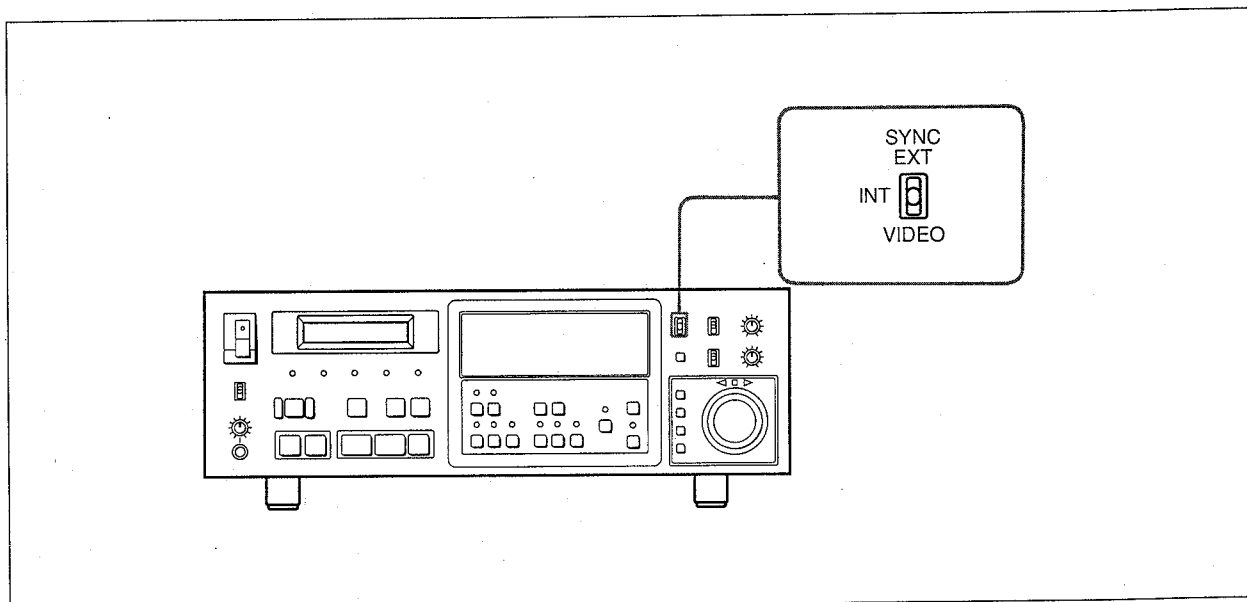
SYNC signal selector

EXT: The PCM-7050/7030 synchronizes with either the D-I sync signal (D-I) or word sync signal (WORD) according to the setting of the EXT SYNC signal selector on the connector panel. However, for PCM-7030, this switch position is effective when the DABK-7031 digital I/O option is installed.

INT: The PCM-7050/7030 synchronizes with the internal clock signal. Set the selector to this position when you use the PCM-7050/7030 as the master unit, or use only the PCM-7050/7030 without connecting it to another unit.

VIDEO: The PCM-7050/7030 synchronizes with the video sync signal coming from the video equipment which is connected to the REF VIDEO INPUT connector (on the optional DABK-7030) or rectangular signal.

Select the REMOTE/LOCAL setting according to the system configuration.
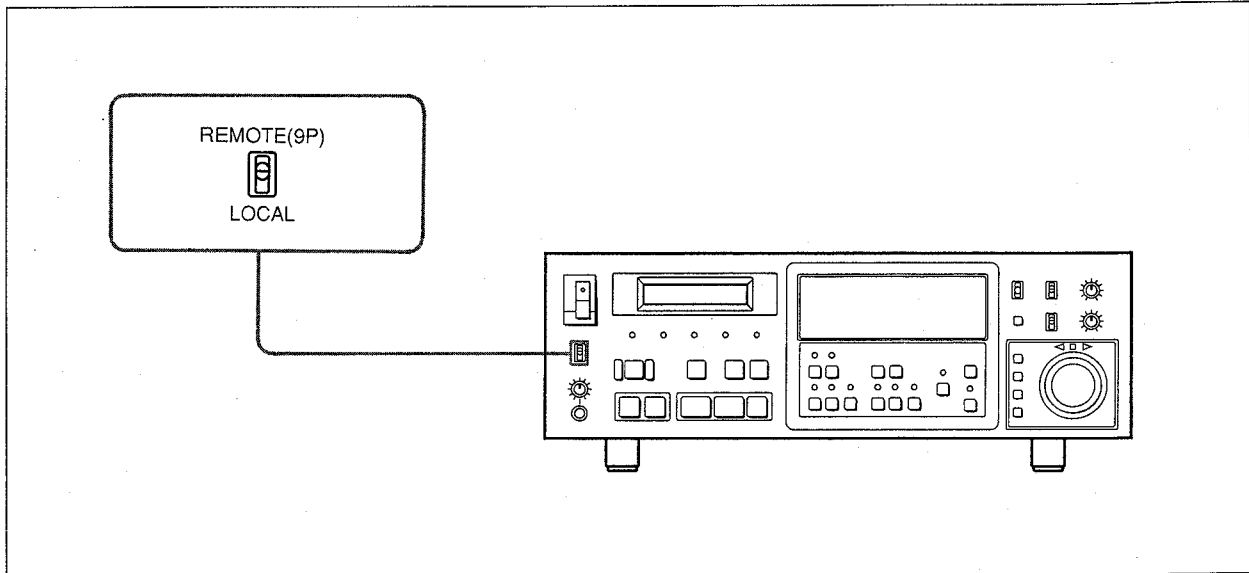
REMOTE (9P)/LOCAL selector

REMOTE (9P): You can control the PCM-7050/7030 only from the controller connected to the REMOTE (9P) connector on the connector panel. In this case, it is not possible to control from the front panel, REMOTE (8P) connector and REMOTE (37P) connector on the connector panel except for the keys and the switches shown below.

- STOP key
- EJECT key
- DISPLAY key
- Dial menu keys (MENU, DATA, SET, and RESET keys)
- SYNC signal selector
- AUDIO INPUT selector
- SAMPLING FREQ selector

You can also control the PCM-7050/7030 from the front panel, REMOTE (8P) connector and REMOTE (37P) connector except the RS-232C connector by setting the setup menu of "LocAL" to "EnAbLE".

LOCAL: The key operation from the front panel is effective along with the control from the REMOTE (8P) connector, REMOTE (37P) connector, and RS-232C connector (optional DABK-7033) on the connector panel.

3-4. Power Supply

This section explains about the power supply and factory (or default) settings of the dial menu.

How to set up the power supply

Push the POWER switch to ON.
The initializing display and data setup display appear for a short time, then the basic display appears.

For more details on display, see Section 2-2 "Display" (page 2-8).
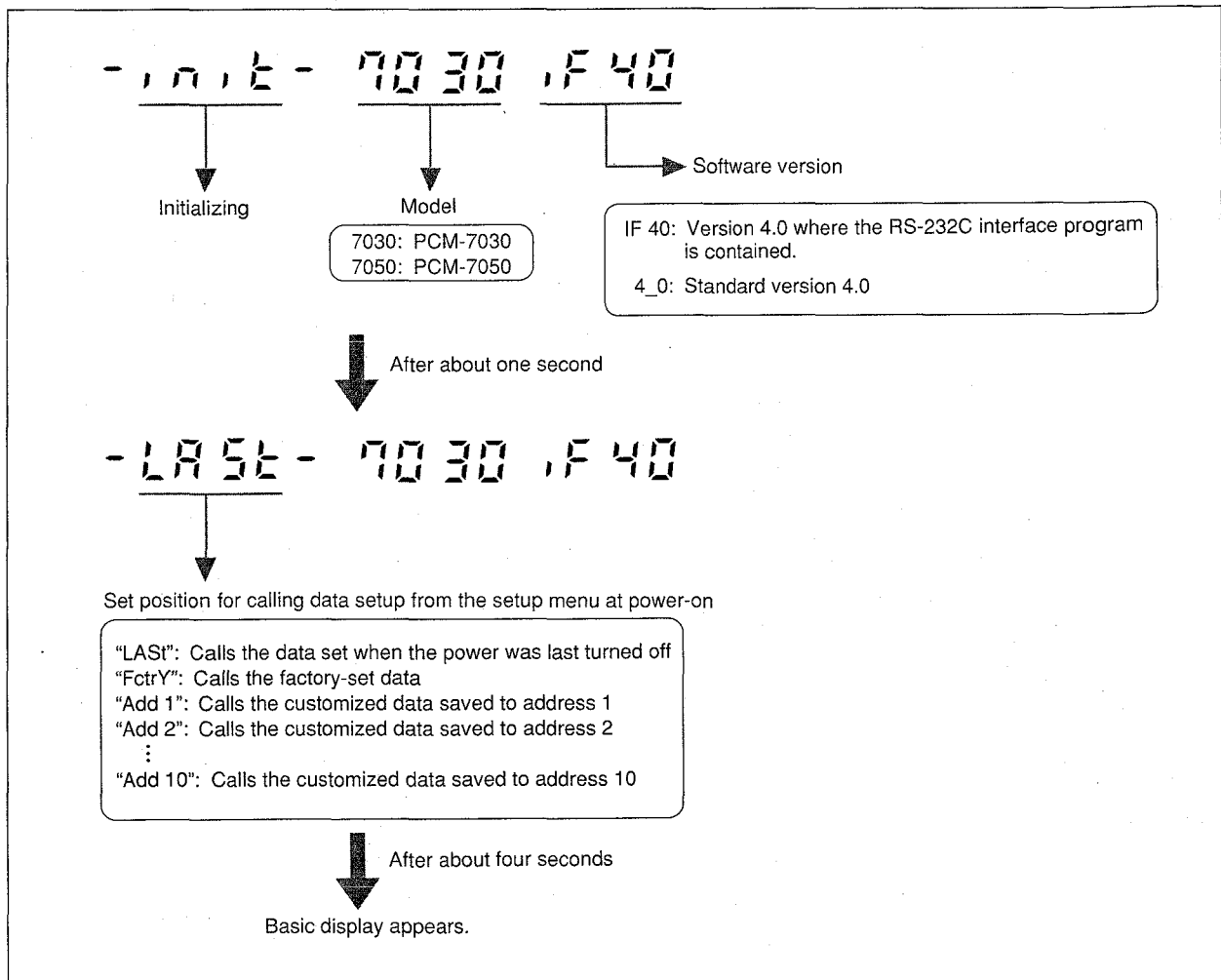
Displays at power-on.

3-5. About DAT Cassettes

For the types of DAT cassettes usable with the PCM-7050/7030 see
Section 1-3 "Recommended Equipment and Optional Accessories".

3-5-1. Loading and Unloading Cassettes

Loading

1 Check that the POWER switch is set to "ON".

2 Insert a DAT cassette.
Push the cassette into the compartment.
The cassette loads automatically.

POWER switch
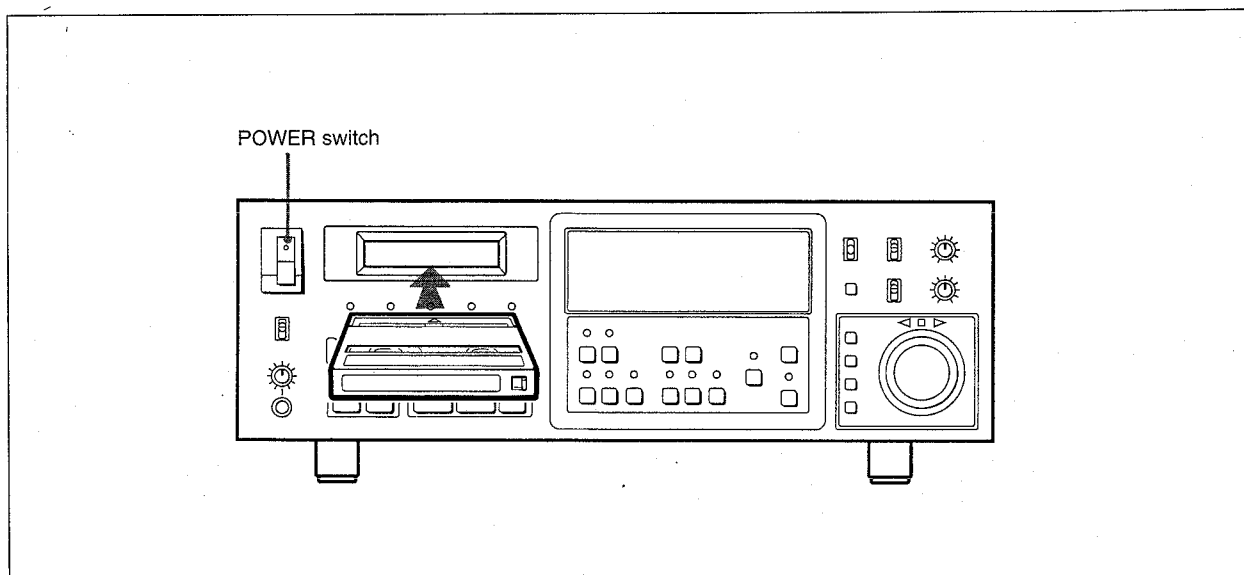
Cassette loading

Unloading

Press the EJECT key before you turn the power off.
The EJECT key lights while the unit is ejecting the cassette.

3-5-2. Preventing Accidental Erasure

To prevent accidental erasure, set the safety tab on the cassette to the position shown below. If you insert a cassette with the tab hole open, the REC INH indicator lights which prevents you from recording.

The hole is open:
Recording is inhibited.
Hole

The hole is covered:
Recording is possible.
Safety tab
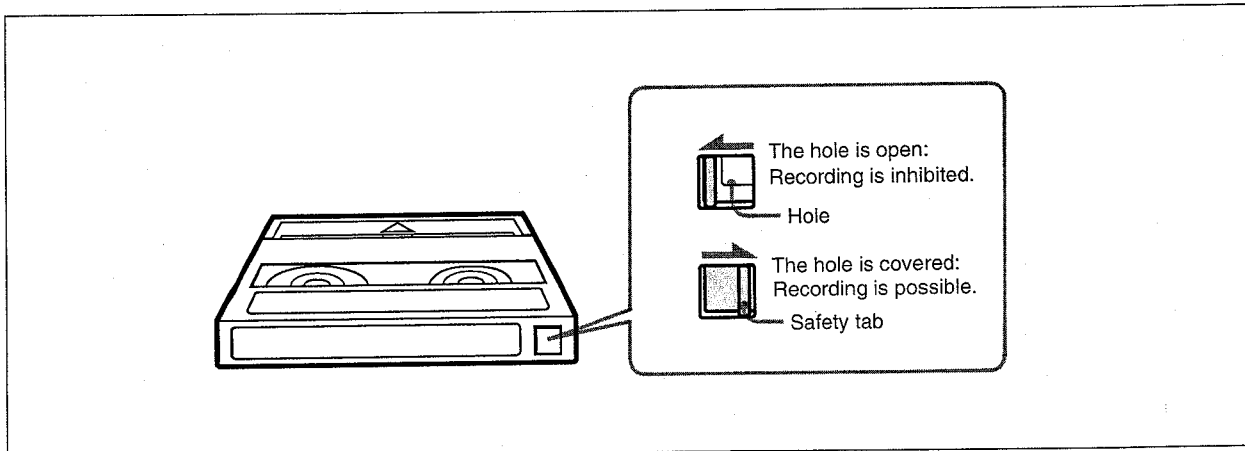
Preventing accidental erasure

Chapter 4. Recording and Playback

This chapter gives you the basic and advanced procedures for recording and playback. Except for the operation, the section "Recording" includes the general information on the time code function. The section will be especially useful if you are not used to using the time code.

4-1-1. Checking the Initial Settings

Check the following settings before starting the recording.
- Sampling frequency — SAMPLING FREQ selector
- Audio input signal — AUDIO INPUT selector
- Sync signal — SYNC signal selector
- Remote or Local — REMOTE (9P)/LOCAL selector
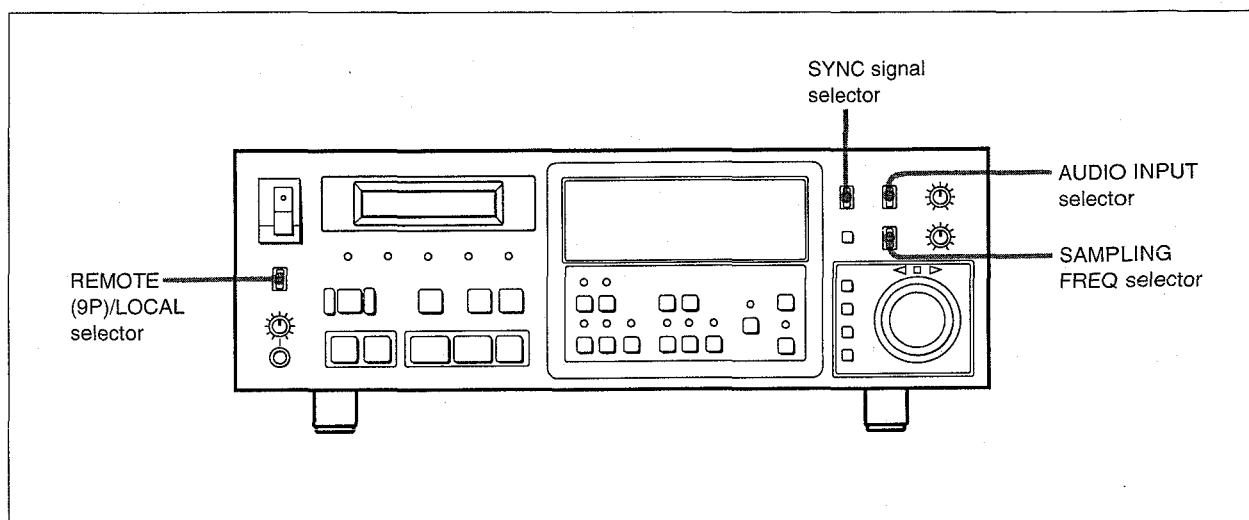
Checking the initial settings

For more details, see Section 3-3 "Initial Settings" (page 3-10).

The connectors on the connector panel (such as the ANALOG OUTPUT connectors, the MONITOR output connectors and the DIGITAL OUTPUT connector) and the HEADPHONES jack on the front panel output the audio signals. Using the INPUT MONITOR key, you can select the audio signal to be output.

The PCM-7050/7030 has a function to read after write for off-tape monitoring of what's being recorded. If you set the INPUT MONITOR key to "OFF" (indicator is turned off) in the monitor recording mode, you can monitor the playback sound and check the recording condition.

INPUT MONITOR key and indicator
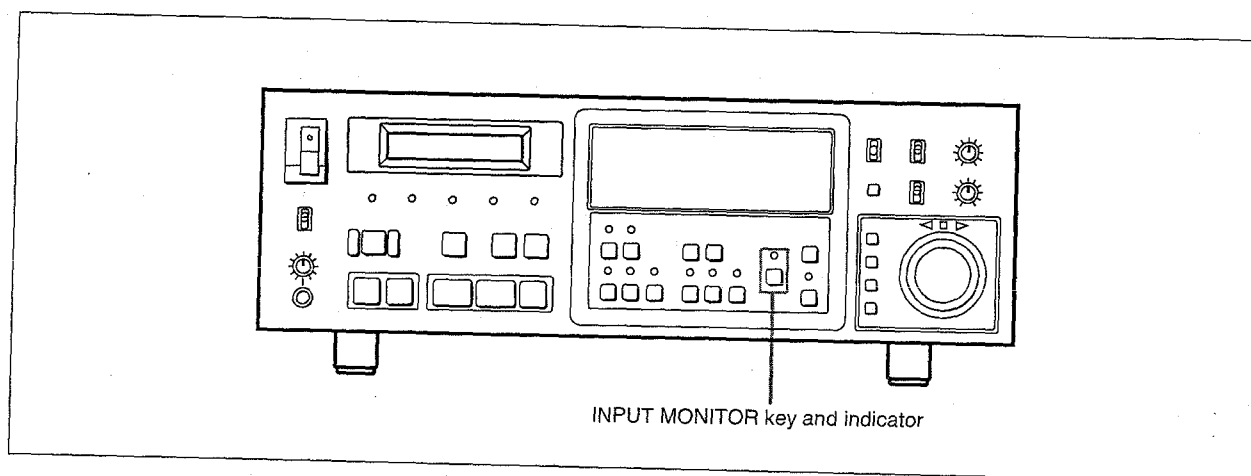
Selecting the audio output signal

Press the INPUT MONITOR key to choose the appropriate audio output signal.

OFF (the indicator is turned off):

Monitor recording mode
While recording sound, the unit outputs the off tape playback signal.
This allows you to confirm the sound recorded on the tape.

Sync recording mode
While monitoring sound, the unit records the input sound after the monitored sound, while inserting cross-fading.
You can confirm the point where the unit shifts from playing to recording.

ON (the indicator is on): The unit outputs the input signal. You can check the sound which is going to be recorded, or the playback sound of the player connected to the PCM-7050/7030.

4-1-3. Selecting the Recording Mode

The unit features two kind of recording modes. The first concerns how to record sound onto the tape (monitor recording mode and sync recording mode). The second concerns what is recorded onto the tape (assemble mode, insert audio mode, and insert sub code mode).
You can record sound either in monitor recording mode (MONITOR REC or RAW: Read After Write) or in sync recording mode (SYNC REC or RMW: Read Modify Write) by selecting "SYnc rEc" (SYNC REC) in the setup menu.

- **Monitor recording mode (RAW: Read After Write)**
  To select this mode, set "SYnc rEc" in the setup menu to "oFF".
  In this recording mode, the leading heads record and the trailing heads play. You can monitor the recorded sound while recording.
- **Sync recording mode (RMW: Read Modify Write)**
  To select this mode, set "SYnc rEc" in the setup menu to "on".
  In this recording mode, the leading heads play and the trailing heads record. You can perform punch-in/punch-out recording with cross-fading at the edit point.

You can select the recording mode: assemble mode, insert audio mode, or insert sub code mode. Select the recording mode with the record mode select keys on the front panel.
Choose ASSEMBLE mode if you are using the non-recorded (blank) tape. If you try to start recording without selecting the recording mode, all the record mode indicators flash and recording will not start.
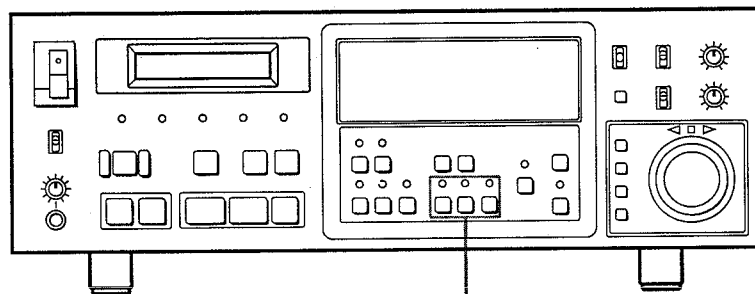
Record mode select keys and indicators

Selecting the recording mode

ASSEMBLE: Records both audio signal and subcode data (time code, Start ID, etc.). You can select either monitor recording or sync recording mode.

The recorded track pattern (recorded signals on all channels) on the tape continues in assemble mode of sync recording mode. But, the recorded track pattern does not continue in assemble mode of monitor recording mode.

If you start recording while the unit is in play mode (the SERVO indicator lights) or when the unit has finished recording with rollback, the recorded track pattern on the tape continues.

INSERT AUDIO: Records (inserts) only the audio signal on the recorded tape. You can select either monitor recording or sync recording mode.

INSERT SUB: Records (inserts) only the subcode data on the recorded tape. In this mode, the unit writes the subcode data in sync recording mode (RMW: Read Modify Write) irrespective of the recording mode setting (monitor recording mode or sync recording mode).

Notes

- When you connect the unit to the RM-D7300 Digital Audio Editor, you can select either monitor recording or sync recording mode. When the recorder chases the VTR under the control of an external synchronizer, set the recorder to sync recording mode.
- When you configure the unit as a recorder and connect it to the BVE-9100/9000/910/900/800/600 Video Editor, set the recorder to sync recording mode.
- When you perform precise manual punch-in/punch-out recording, set the recorder to sync recording mode.
- You cannot record onto a blank tape in insert recording mode.
- To prevent mis-recording, open the safety tab of the cassette (the REC INH indicator lights), or set all record mode select keys to off.
- When you select either assemble mode or insert audio mode in monitor recording mode, or start recording in monitor recording mode, "SYnc rEc - oFF -" (SYNC REC - OFF -) appears in the display.

Recording mode

Recording mode		Simultaneous play-after-record	Punch-in/ punch-out	Continuation of track pattern (recorded signals on all channels)
Monitor recording (Leading heads: record/ Trailing Heads: play)	Assemble	Yes	No	No *
	Insert audio	Yes	No	—
	Insert sub code	—	—	—
Sync recording (Leading Heads: play/ Trailing heads: record)	Assemble	No	Yes	Yes
	Insert audio	No	Yes	—
	Insert sub code	—	—	—

* If you start recording while the unit is in play mode (the SERVO indicator lights) or when the unit has finished recording with rollback, the recorded track pattern on the tape continues.
When the tape on which the track pattern does not continue is played back, interpolation or muting occurs.

Subcode data that the PCM-7050/7030 can record and play back
According to the DAT format, subcode areas are provided at the ends of each tape track. These areas are used for writing various subcodes. The editing system including the RM-D7300 Digital Audio Editor and the PCM-7050/7030 Digital Audio Recorder records and plays back the following subcode data in the subcode area.

- DAT time code for professional use (SMPTE/EBU time code)
- Absolute time [1]
- Start ID
- Skip ID
- End ID
- Program numbers

1) Recording of absolute time is possible when recording from the absolute time already recorded on the tape or when recording from the beginning of the tape in assemble mode or insert sub code mode.

Notes

- When you write subcode data such as a Start ID using a Digital Audio Recorder that cannot read/write the professional DAT time code, the professional DAT time code is erased.
- When the unit records subcode data, other subcode data such as DATE, already written onto the tape, is erased.

4-1-4. General Information on Time Code

This section explains about the time code which is peculiar to digital audio electronic editing or synchronized operation with video equipment. Even if you are experienced in using the time code, be sure to read the **Notes** on the next page.

What is time code?

The electronic editing of the recorded digital audio signals require the precise information of the editing point. The time address is recorded on the subcode area of a DAT tape for that purpose, and the recorded data is called "time code". When recording in ASSEMBLE or INSERT SUB mode, the PCM-7050/7030 automatically records the selected time code. The factory setting is SMPTE (29.97 Hz), drop frame time code for the model for the USA and Canada, and EBU time code for the model for European countries. (You can change the setting with the Dial menu.)

SMPTE/EBU time code

The PCM-7050/7030 has adopted the SMPTE/EBU time code of IEC standard. The SMPTE time code applies to the NTSC format, and the time EBU time code to PAL/SECAM format. The factory setting is the SMPTE or EBU as described above.

To change the factory setting SMPTE to EBU or EBU to SMPTE time code, see the section on "rEF tcF (REFERENCE TIME CODE FORMAT)" (page 5-39) in Section 5-3-3 "Setup Menu".

Making Use of Time Code

Using the time code, you can locate the tape easily and edit the tape in frame units. If you set up a system for external synchronization, the unit can chase (to synchronize with the input time code) with the other equipment. The setup enables the PCM-7050/7030 not only edit audio signals but edit with a VTR.

Notes

- Record the same type of time code continuously on a DAT tape. If there is a non-recorded or discontinuous area on the tape, a failure may occur during the search or editing operations.
- The time code used by the non-professional DAT recorder is called ABS time (Absolute time: the tape running time from the beginning of the tape), which is different from the time code used in this unit. When you use the tape recorded on a non-professional DAT recorder, set the time code base (TC BASE) of the PCM-7050/7030 to ABS TIME, or overwrite the time code before editing.

On the time code base, see the section on "tc bASE (TIME CODE BASE)" (page 5-37) in Section 5-3-3 "Setup menu".

- We recommend you use the professional SMPTE/EBU time code as the time code base in the recorder unit for editing. As for the player unit, you can use the ABS time code because the player unit outputs the SMPTE/EBU time code after converting it from the ABS time code.
- As long as the PCM-7050/7030 is operating (not in the stop mode), the unit usually outputs the playback time code in normal speed even in the FF/REW or cue mode. During the FF/REW operation, though, tape speed changes up to the 150 times normal speed. Therefore, in high speed mode such as FF/REW, the time code count jumps according to the tape speed after 5 continuous frames as in the following example:

    Example: 1 2 3 4 5, 81 82 83 84 85, 161 162 163 164 165 ...
    (Actual time code count is in hours, minutes, seconds, and frames units, such as "00H00M00S00F".)

Recording audio signals

Record mode settings
- ASSEMBLE (audio signals and subcode data) or INSERT AUDIO (audio signals) mode
- Monitor recording (read after write) or Sync recording (punch-in/ punch-out recording) mode

In the ASSEMBLE mode, the unit records subcode data (such as time code and Start ID) as well as the audio signals.

Also see Section 4-1-2 "Selecting the Audio Output Signals" (page 4-2) on the recording mode, and the following "Recording procedure" and Section 4-1-4 "General Information on Time Code" (page 4-7) on recording the time code. About the Start ID, see the section "Writing and erasing Start ID/Skip ID/End ID" (page 4-23).

Recording procedure
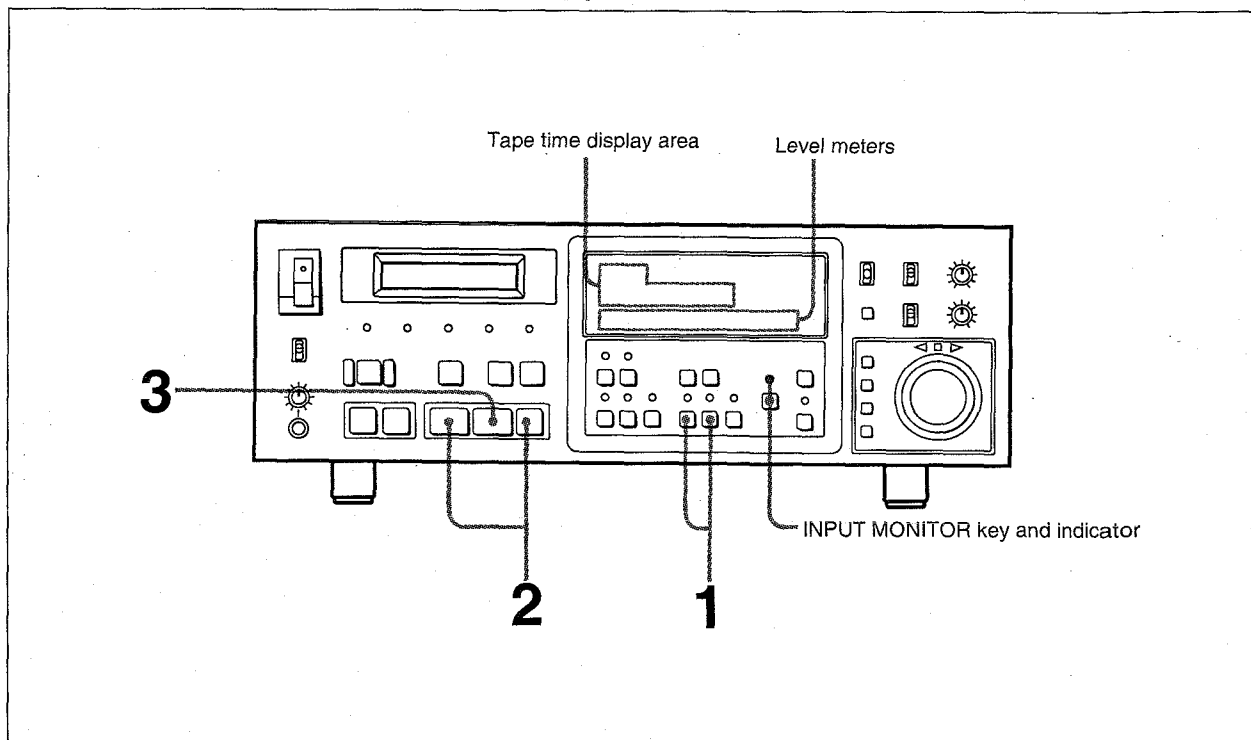
Recording procedure

1 Check that the recording mode is set appropriately to ASSEMBLE or INSERT AUDIO and to the monitor recording or the sync recording.

2 While holding the REC key down, press the PLAY key.
The REC key and the PLAY key light and recording starts. The recording level of the audio signal and the time code mode (in ASSEMBLE mode) display on the Level meters and in the tape time display area on the Display respectively.

3 Press the STOP key to stop recording.

Output signal and the level display while recording
When the INPUT MONITOR key is turned on, the unit displays and outputs the input signal. When the key is turned off in the monitor recording mode, the unit displays and outputs the playback signal after recording.

Also see Section 4-1-2 "Selecting the Audio Output Signals" (page 4-2).

Controlling the recording level
When you select ANALOG with the AUDIO INPUT selector, you can control the recording level with the ANALOG AUDIO INPUT level controls. The center position of the controls indicates the reference level.

About level diagram
The relationship between the input and output signal level and the display on the level meters is called the "level diagram". In the factory setting, the incoming and outgoing +4 dBs signal displays as − 20 dB on the level meters. If you want to use a different level, please consult a qualified Sony service technician for resetting.

Notes

- The format of time code used in recording and playback follows the setting of the setup menu, and not the format of input time code or that of the tape ID.
- Record zero data (muting signal) instead of an audio signal for about 30 seconds from the tape beginning. Record neither sound nor an ID at the head of the tape. Otherwise, you cannot play back or locate, erase, or renumber IDs properly.

Setting input signal gain and upper limit of the input signal gain

You can set the gain of the analog audio input and digital audio input signals, and display the set input signal gain, using the "inP GAin" (INPUT GAIN) preset menu. You can also set the upper limit of the input signal gain from the "GAin rnG" (GAIN RANGE) preset menu.

Setting and displaying the input signal gain

To set and display the gain of the analog audio and digital audio signals, using the "inP GAin" (INPUT GAIN) preset menu, follow the procedure below.

Initial value at power-on: 0 dB

The set value is not backed up in memory.
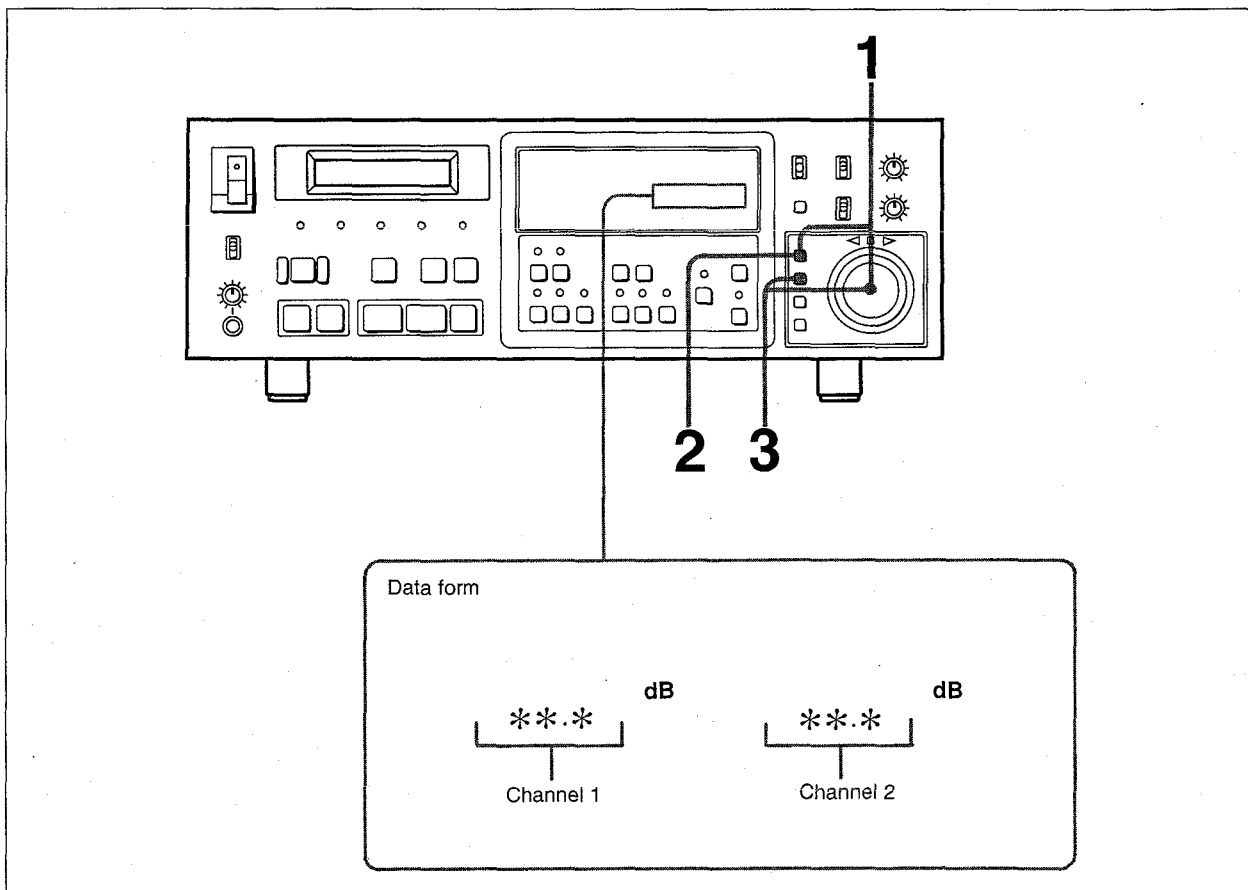
Setting input signal gain and upper limit of the input signal gain

1 Turn the search dial while holding the MENU key down and set the display to "inP GAin".

2 Press the MENU key.
The displayed input signal gain value for the channel which you can change flashes and every time you press the key, the flashing channel moves to the right (channel 1 and channel 2 → channel 1 only → channel 2 only → no flashing...).

3 Turn the search dial while holding the DATA key down and set the gain of the desired channel(s).
The setting range is from −∞ to +12.0 dB.
To increase the number: Turn the search dial clockwise.
To decrease the number: Turn the search dial counterclockwise.

The increments, that depend on the gain setting, are shown below.

Gain (dB)	Increments (dB)
−∞ to −55.0	2 to 5
−55.0 to −50.0	1
−50.0 to −40.0	0.5
−40.0 to −12.0	0.2
−12.0 to +12.0	0.1

−∞ is displayed -_ _ _.

4 Repeat steps **2** and **3** until you complete the gain setting for the desired channel(s).
You don't need to press the SET key.

Note

When the version number of the RM-D7300 Digital Audio Editor is 1.0, the RM-D7300 controls the gain within ±6 dB.

Setting the input gain back to "0" – How to reset

1 Turn the search dial while holding the MENU key down and set the display to "inP GAin".

2 Press the MENU key.
The displayed value for the channel which you can change flashes and every time you press the key, the flashing channel moves to the right (channel 1 and channel 2 → channel 1 only → channel 2 only → no flashing...).

3 Press the RESET key while holding the DATA key down.
Flashing channel(s) are set to "0".

4 Repeat steps **2** and **3** until you finish resetting the desired channel(s).

Setting the upper limit value of the input signal gain

To set the upper limit value of the input signal gain from the "GAin rnG" (GAIN RANGE) preset menu, follow the procedure below.

Factory-set value: "12 dB" (12 dB)

The set value is saved when you turn the power off.
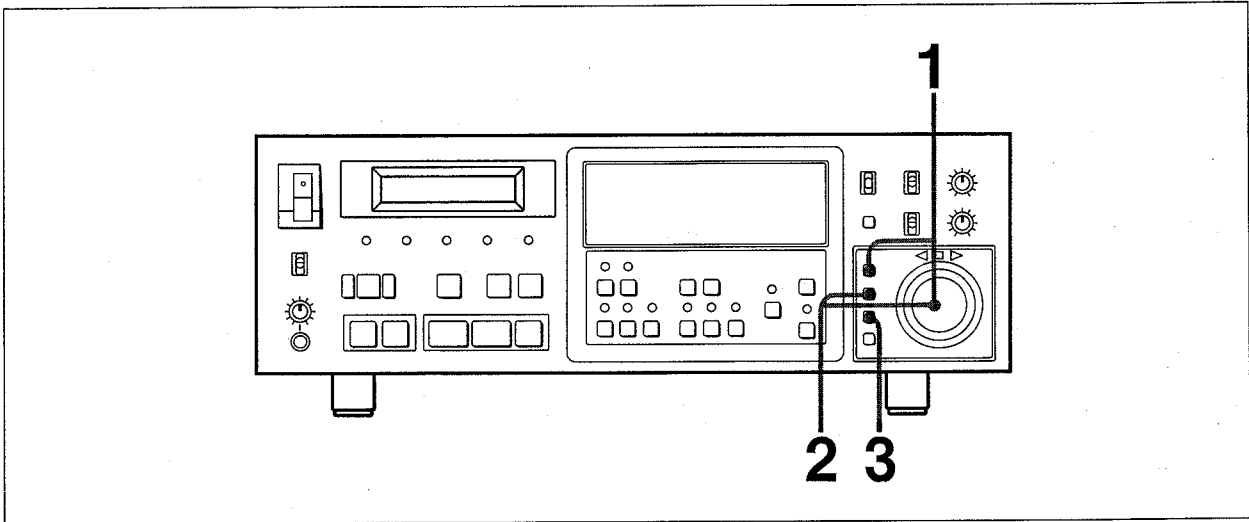
Setting the upper limit value of the input signal

1 Turn the search dial while holding down the MENU key and set the display to "GAin rnG".

2 To set the upper limit time, turn the search dial while holding down the DATA key.
As the search dial is turned, the indicator changes as follows:
"12 dB" (12 dB): —∞to +12 dB
"6 dB" (6 dB): —∞to +6 dB
"0 dB" (0 dB): —∞to +0 dB

3 Press the SET key.
The indicator stops flashing and the upper limit value selection terminates.

Note

If the set gain value exceed the previously set upper limit value, this setting is not accepted. If, by pressing the SET key, the display shows "–iLLEGAL–", check the set gain value.

Cross-fading time in sync recording mode

You can perform punch-in/punch-out recording with cross-fading at the edit point (punch-in point and punch-out point) whenever you select sync recording mode (RMW: Read Modify Write).

You can set a value of between 0 and 999 ms for the cross-fading time at the punch-in and punch-out points, using the "croS FAdE" (CROSS FADE) preset menu.

To set the cross-fading time, follow the procedure below.

Factory-set value: 10 ms
The setting is saved even if you turn off the power.
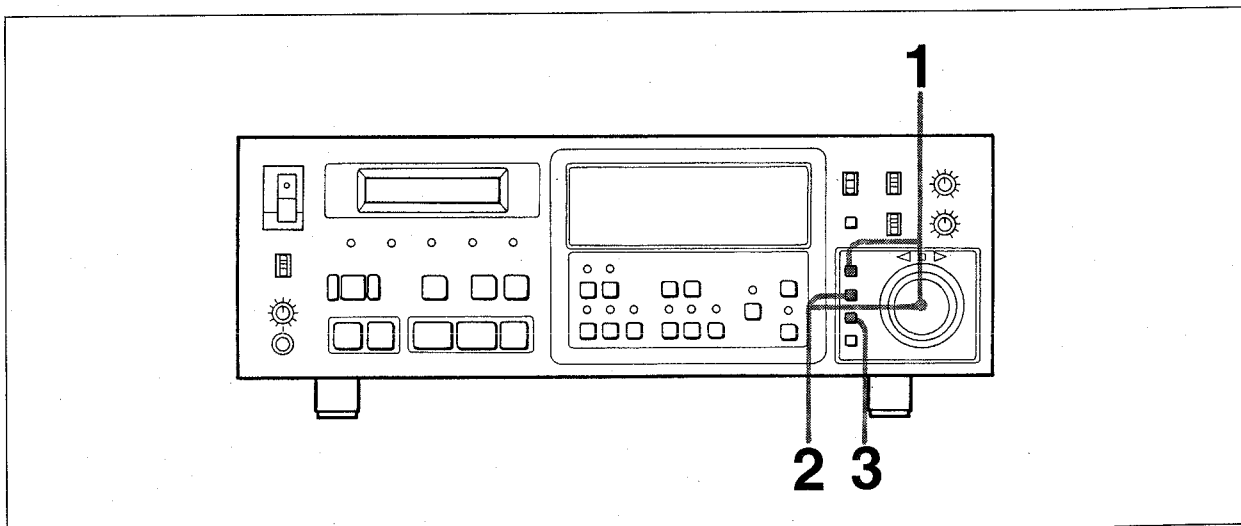
Setting the cross-fading time

1 Turn the search dial while holding down the MENU key and set the display as follows.
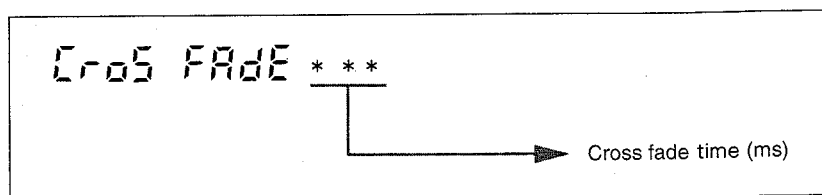
Cross fade time (ms)

2 To set the cross fade time, turn the search dial while holding the
DATA key down.
The display flashes. ˙

> **To increase the cross-fading time:** Turn the search dial
> clockwise.
>
> **To decrease the cross-fading time:** Turn the search dial
> counterclockwise.
>
> **To reset the fading time to 10ms:** Press the RESET key while
> holding down the DATA key. The cross-fading time
> display is reset to "10".

Cross-fading time (unit: ms)	Variable step (unit: ms)
0 to 20	1
20 to 100	10
100 to 999	100

3 Press the SET key

Recording the time code

Recording mode setting

ASSEMBLE: Records the audio signals and the time code simultaneously. Choose this mode when using a blank tape.

INSERT SUB: Records a subcode data such as Start ID and time code. Choose this mode when using a pre-recorded tape.

Setting the time code format

The initial setting of the time code may not correspond to the format used in your area. If the setting shown in the display is wrong, change it to the format used in the area. (The SMPTE time code applies to the NTSC format, and the EBU time code to PAL/SECAM format.)

To change the setting, see the section on "rEF tcF (REFERENCE TIME CODE FORMAT)" (page 5-39) in Section 5-3-3 "Setup Menu".

Selecting the time code to be recorded (when a DABK-7030 is installed)

Select the time code with the Recording time code selector on the DABK-7030 connector panel.

INT: When recording the time code from the built-in time code generator

EXT: When recording the time code from the TIME CODE INPUT connector (on the DABK-7030 connector panel)

The selection can also be made from the setup menu.

For details of how to select the time code from the setup menu, see the section "Selecting the recording time code (when a DABK-7030 is installed)" on page 4-17.

Presetting the time code value

When you are going to record the time code from a built-in time code generator, you can set the initial value.

For details of how to preset the time code value, see the section "Setting the start time value of the time code generator" on page 4-18.

Selecting the mode of the built-in time code generator

The PCM-7050/7030 has two kinds of time code generator mode as follows. The factory setting mode is OFF (REC RUN/REGEN).

OFF(REC RUN/REGEN): The unit generates the time code from the initial setting value. If you don't define the initial value, the unit generates the time code continuously according to the recorded time code on the tape.

ON(FREE RUN): The unit generates the time code at all times having no relation to the tape running mode.

To change the mode, see the section on "FrEErun (FREE RUN)" (page 5-50) in Section 5-3-3 "Setup Minu" for more details.

Selecting the recording time code (when a DABK-7030 is installed)

Selects the time code: an external time code input to the unit or an internally generated time code.

The setting is saved when you turn the power off.

Factory-set position: "rEAr SEL" (REAR SELECTOR)

Selecting recording time code

1 Turn the search dial while holding down the MENU key and set the display to "rEc tc".

The unit enters recording time code selection mode.

2 To select the recording time code, turn the search dial while holding down the DATA key.

By turning the search dial, the indicator changes as follows:

"rEAr SEL" (REAR SELECTOR): The unit records the time code according to the setting of the recording time code selector on the rear panel.

"int" (INTERNAL): The unit records the internally generated time code.

"inPut" (INPUT) [the external time code]: The unit records the external time code input to the TIME CODE INPUT connector on the rear panel. "EXT" appears.

3 Press the SET key.

The indicator flashing stops and recording time code selection terminates.

Setting the start time value of the time code generator

Sets the start time value of the internal time code generator. Make this setting in the STOP mode, or while ejecting the cassette, or when a cassette is not inserted. The set data will change if the unit enters a mode other than the STOP mode.
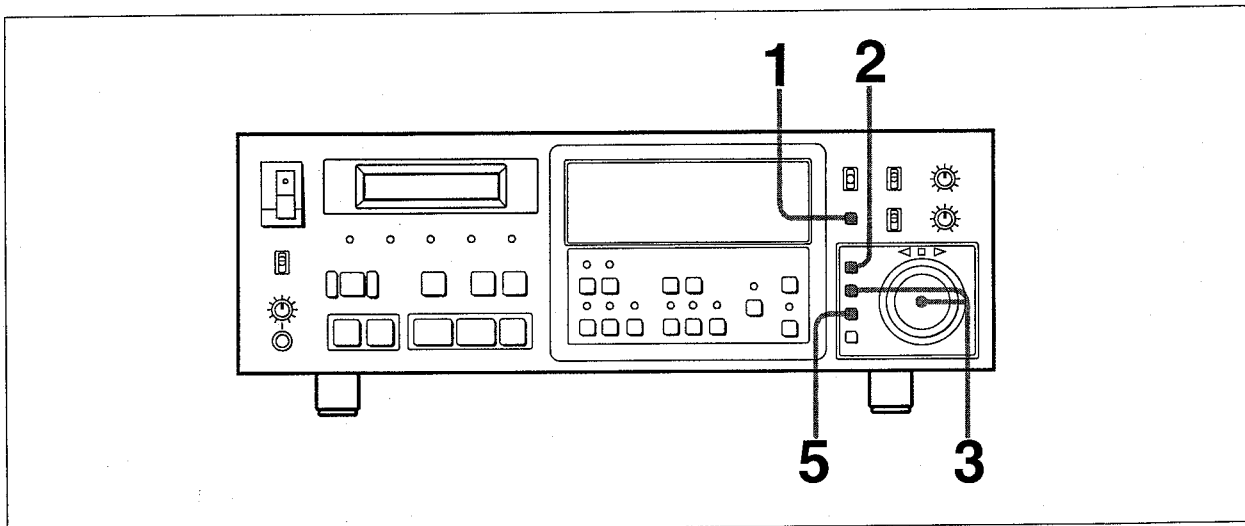
Setting the start time value

1 Press the DISPLAY key and set the display to "GEN SET TIME". This operation puts the unit in the start time set mode.

2 Press the MENU key.
The displayed digit flashes and every time you press the key, the flashing digit moves to the right (H → M → S → F → H...).

3 Turn the search dial while holding the DATA key down to set the data for the flashing digit.
To increase the number: Turn the search dial clockwise.
To decrease the number: Turn the search dial counterclockwise.

4 Repeat steps **2** and **3** until you complete the setting for all digits.

5 Press the SET key.
The flashing stops and the setting finishes.

Resetting the start time code value

1 Press the DISPLAY key and set the display to "GEN SET TIME" display.
This operation puts the unit into the start time set mode.

2 Press the RESET key while holding the DATA key down.
All digits are reset to "0".

3 Press the SET key.
Flashing stops and the start time code value sets to "0".

Recording procedure of the time code
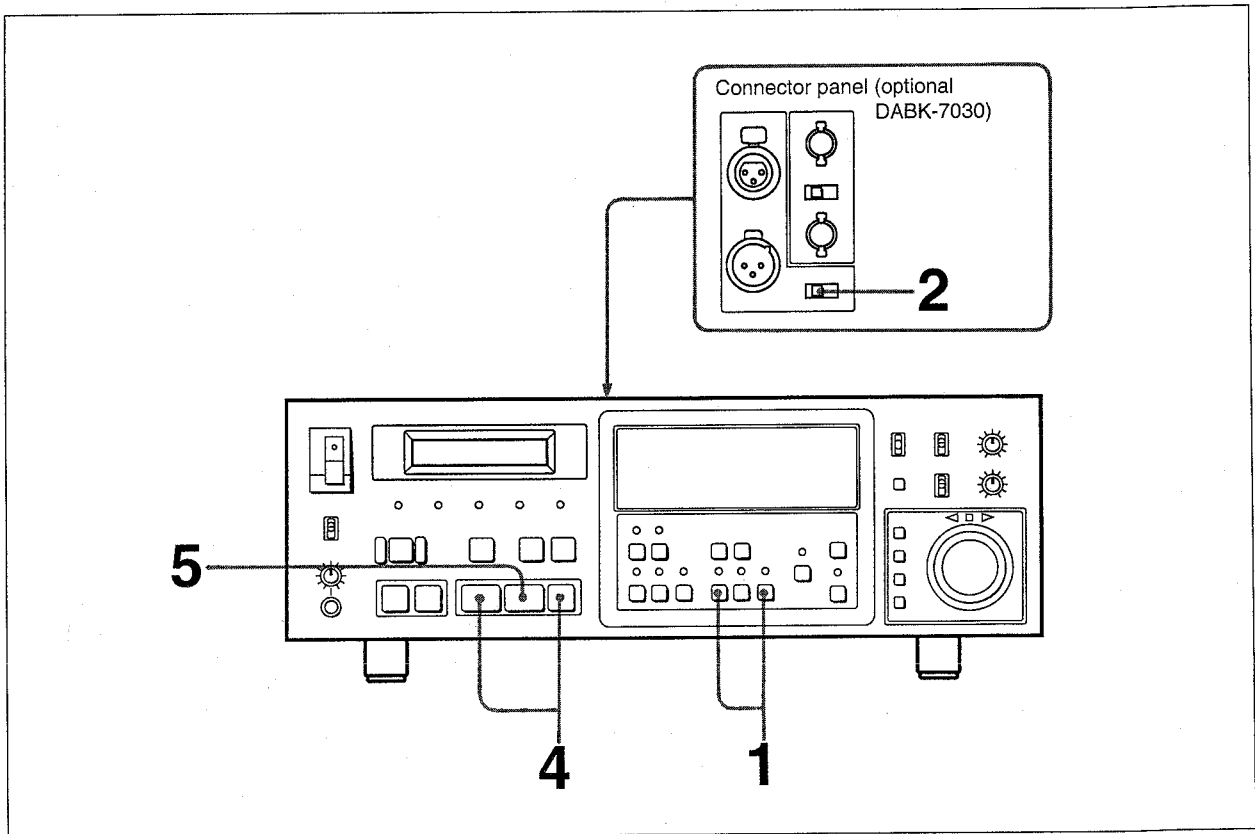
Recording procedure

1 Check the setting of the record mode select keys (ASSEMBLE or INSERT SUB).

2 If the DABK-7030 is installed, check the setting of the recording time code selector.

3 If the recording time code selector is set to INT, then set the initial value of the recording time code.

4 While holding the REC key down, press the PLAY key.
The REC key and PLAY key light, and recording begins from the initial setting. The time code displays in the tape time display area on the display while recording.

5 Press the STOP key to stop recording.

Note

If you press one of the tape transport keys (PLAY, FF, REW etc.) before recording starts, after presetting an initial value for the time code, the set initial value is cleared. Preset the initial value again.

Recording the user bit

Setting the user bit

Sets the user bit of the internal time code generator. Make this setting in the STOP mode, or while ejecting the cassette, or when a cassette is not inserted. The set data will change if the unit enters a mode other than the STOP mode.
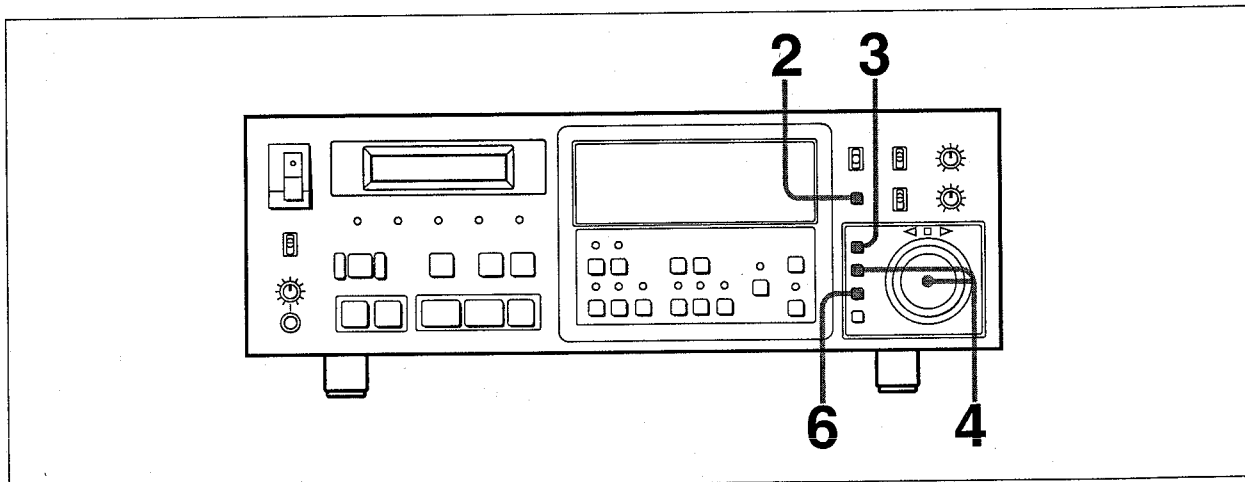
Setting the user bit

1 Set "ub-diSP"(USER BIT DISPLAY) to ON from the setup menu of the dial menu.

See the section on "ub-diSP (USER BIT DISPLAY)" (page 5-56) in Section 5-3-3 "Setup Menu" for more details.

2 Press the DISPLAY key and set the display to "GEN SET U-BIT" display.
This operation puts the unit into the user bit set mode.

3 Press the MENU key.
The displayed digit flashes and every time you press the key, the flashing digit moves to the right (H → M → S → F → H...).

4 Turn the search dial while holding the DATA key down to set the data for the flashing digit.
    To increase the number: Turn the search dial clockwise.
    To decrease the number: Turn the search dial counterclockwise.

5 Repeat steps **3** and **4** until you complete the setting for all digits.

6 Press the SET key.
The flashing stops and the setting finishes.

Setting the user bit back to "0" – How to reset
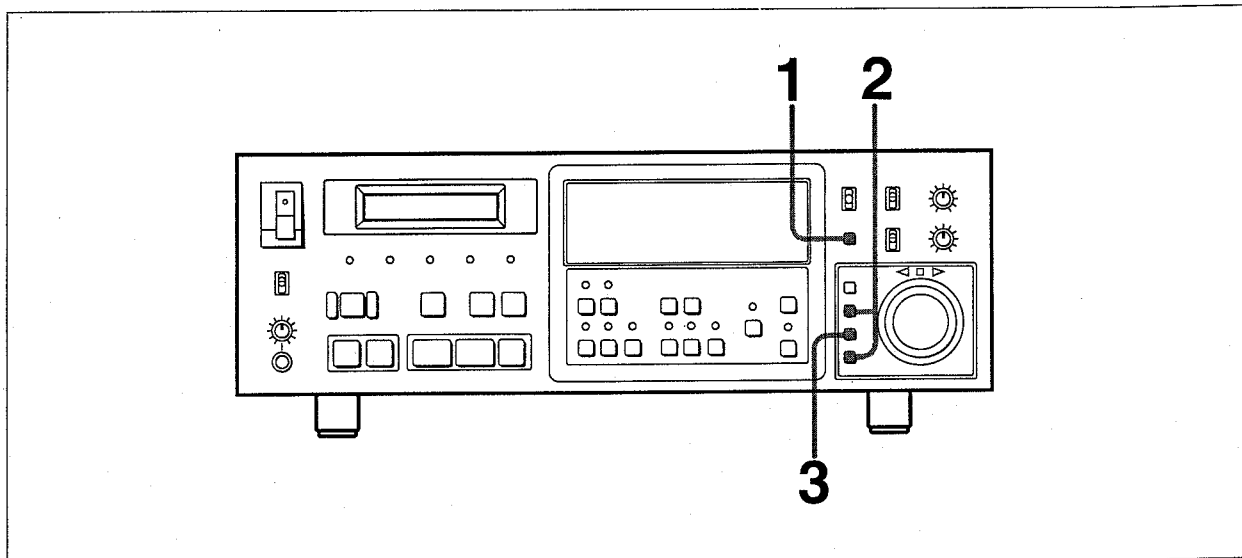
Resetting the user bit

1 Press the DISPLAY key and set the display to "GEN SET U-BIT".
This operation puts the unit into the user bit set mode.

2 Press the RESET key while holding the DATA key down.
All digits are set to "0".

3 Press the SET key.
Flashing stops and the user bit is set to "0".

Recording the set user bit

1 Check the setting made with the record mode select keys (ASSEMBLE or INSERT SUB).

2 If the DABK-7030 is installed, check the setting of the recording time code selector.

3 If the recording time code selector is set to INT, set the user bit.

For details of how to set the user bit, see the section "Setting the user bit" on page 4-21.

4 While holding down the REC key, press the PLAY key.
The REC and PLAY keys light, and the unit records from the set user bit.

5 Press the STOP key to stop recording.

Writing and erasing Start ID/Skip ID/End ID

The PCM-7050/7030 can write Start ID, Skip ID and End ID in the subcode area on the tape. The Start IDs are useful for locating a certain point on the tape.

Writing Start ID, Skip ID and End ID
You can write ID on a blank tape together with the audio signals, or separately on the recorded tape while listening to the playback sound.

Record mode setting
ASSEMBLE: Writes ID while recording audio signals.
INSERT SUB: Writes ID while playing back audio signals.
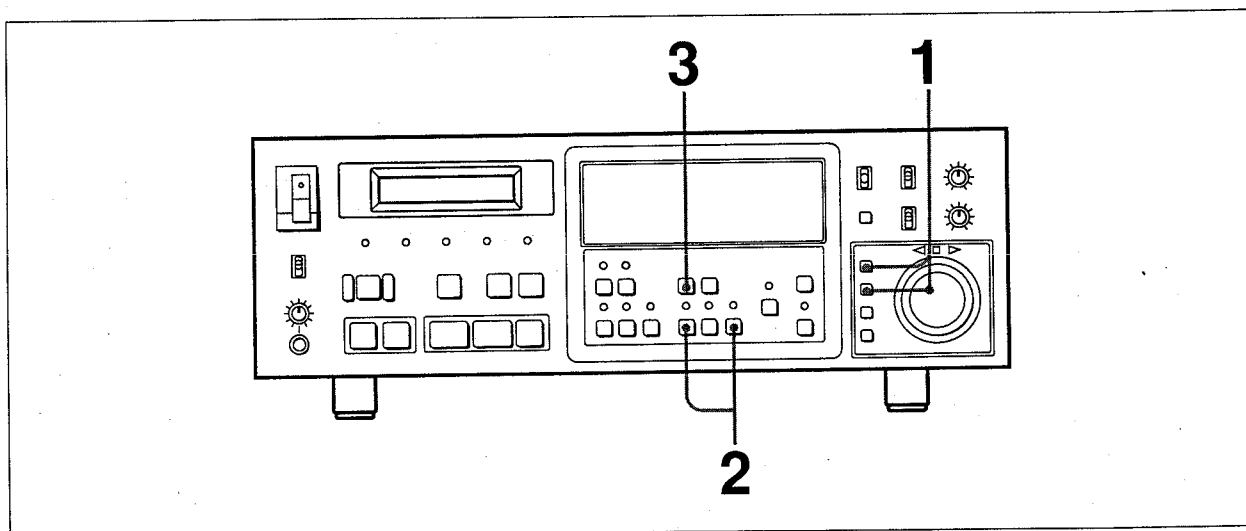
Writing an ID

1 Select the ID to be recorded.

For details of how to set the ID to be recorded, see the section on "id rEc (ID REC)" (on page 5-62) in section "5-3-3 Setup Menu".

2 Check the setting of the record mode select keys (ASSEMBLE or INSERT SUB).

3 Press the START ID WRITE key at the desired point while recording in ASSEMBLE mode or playing back in the INSERT SUB mode.
When START ID is selected, the Start ID is written to the tape for 9 seconds. While this is being done, "StArt id" flashes and "WRITE" lights in red on the display.
When Skip ID is selected, the Skip ID is written for one second. While this is being done, "SHort id" lights and "WRITE" lights in red on the display.
When End ID is selected, the End ID is written for 9 seconds. While this is being done, "End id" lights and "WRITE" lights in red on the display.

4-23

Notes

- Record zero data (muting signal) instead of an audio signal for about 30 seconds from the tape beginning. Do not write an ID at the head of the tape. Otherwise, you cannot locate, erase, or renumber IDs properly.
- When you write more than one ID, leave intervals of at least 30 seconds. If the interval is less than 30 seconds, the unit might skip the ID or program number when locating or renumbering.
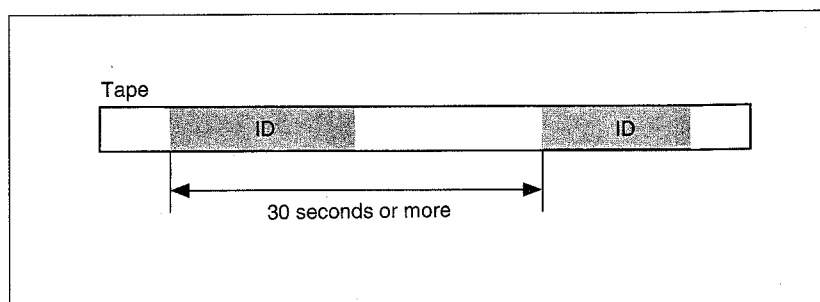
See Section 4-2-3 "Locating Specific Points on a Tape" (page 4-33) for details on locating by Start ID.

To check the selected ID
Press the WRITE key or ERASE key with a tape loaded, and no recording mode selected. The selected ID is displayed for one second.

Automatic recording Start ID
The Start IDs are written on the tape whenever the PCM-7050/7030 records in the assemble mode.
Program numbers are also written to the tape, in order, from a set value. If you reposition the tape to start recording at another portion, after the unit has finished recording, the resulting Program numbers may not be continuous. Renumber the Program numbers.

For the setting, see the section on "S-id Auto (START ID AUTO REC)" (page 5-61) in Section 5-3-3 "Setup Menu" for details.
For details of how to set the program number, see the section "Writing the program number" on page 4-26.

Start ID and memory start
The PCM-7050 has a memory start function that enables quick output of playback sound. The PCM-7030 support this function only when fitted with the DABK-7032 memory start option. Using this function, you can set the ID point more precisely.

See Section 4-3-3 "Outputting Playback Signals Immediately after Pressing the PLAY Key — Memory Start Function" (page 4-50).

Erasing Start ID/Skip ID/End ID

The unit can locate and erase ID as follows:

Record mode setting: INSERT SUB
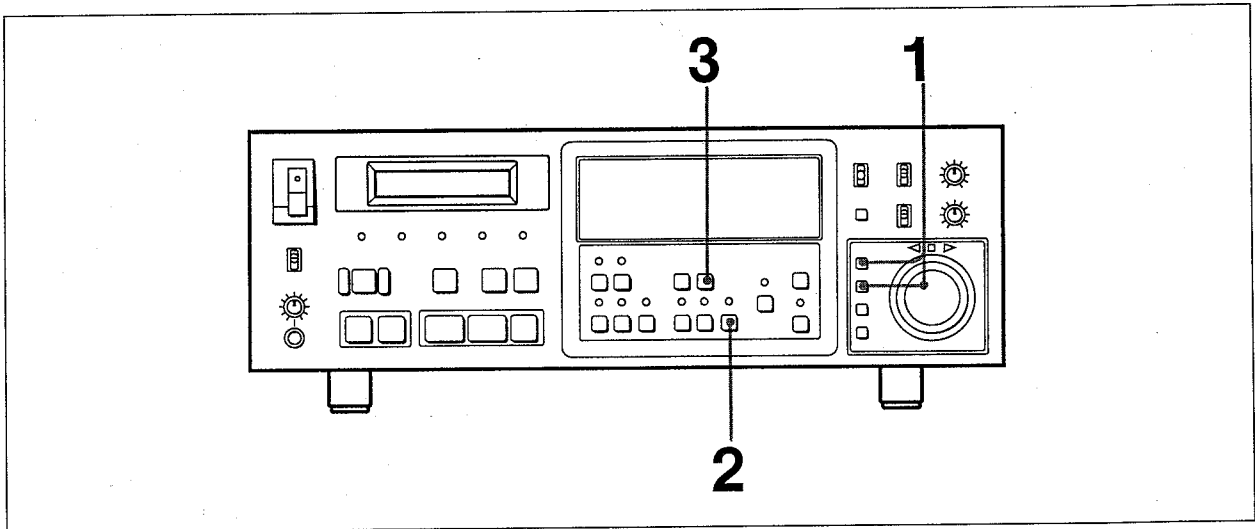
Erasing an ID

1 Select the ID to be erased.

For details of how to set the ID to be erased, see the section "id rEc (ID REC)" (page 5-62) "5-3-3 Setup Menu".

2 Make sure the record mode select key is set to INSERT SUB.

3 Press the START ID ERASE key during playback or when the tape is in stop mode.
ID selected in step 1 of "START ID", "SHort id" or "End id" and "ERASE" flash on the display, and the tape rewinds to locate to the previous ID.
Then "ERASE" on the display lights while the unit erases the ID. The tape stops automatically after erasing the ID.

Writing the program number

You can write a program number simultaneously with a start ID in assemble mode recording. You can set this program number by using the "Pno" display key menu.

After you first record a set program number, or when you do not set the program number, the program number is incremented by 1 from a current program number and written to the tape. Whenever you insert a blank tape and record the first start ID without first setting the program number, "01" is written.
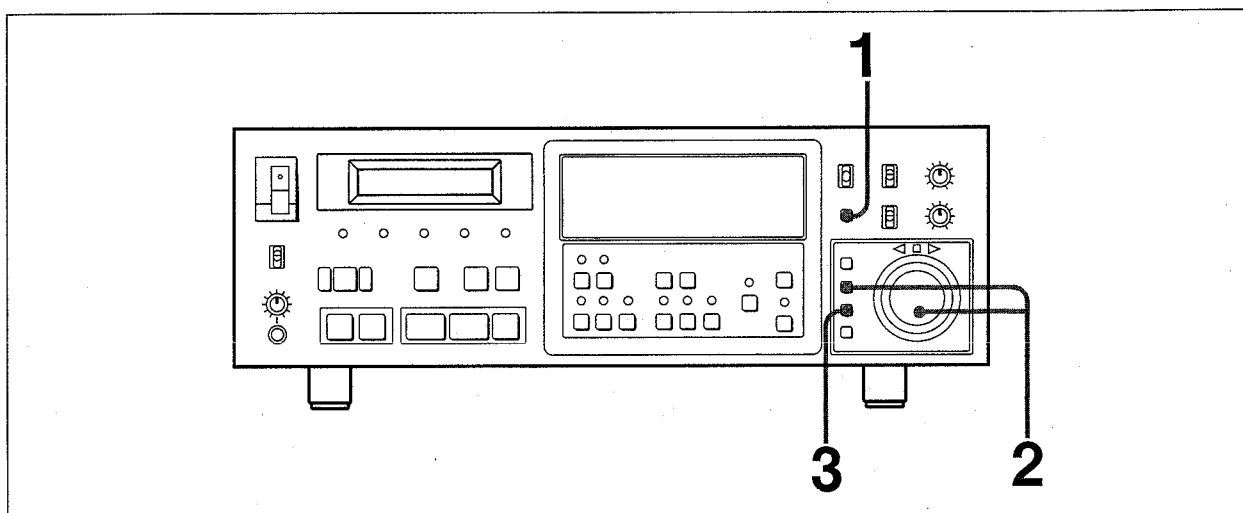
Writing the program number

1 Press the DISPLAY key to set the display to "Pno".

Pno * * *

Program number to be recorded with the start ID (01 to 799)
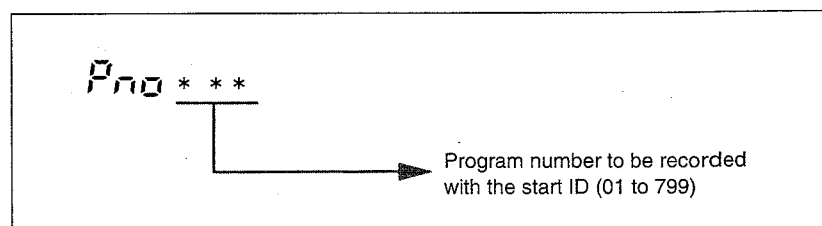
2 To set the program number to be written, turn the search dial while holding down the DATA key.

The display flashes.

To increase the program number: Turn the search dial clockwise.

To decrease the program number: Turn the search dial counterclockwise.

To reset the program number to "01": Press the RESET key while holding down the DATA key.

3 Press the SET key.

The display stops flashing.

The set value is held until the unit records the start ID.

Renumbering Program numbers

You can renumber Program numbers.

Set the initial value and perform renumbering in the display key menu.
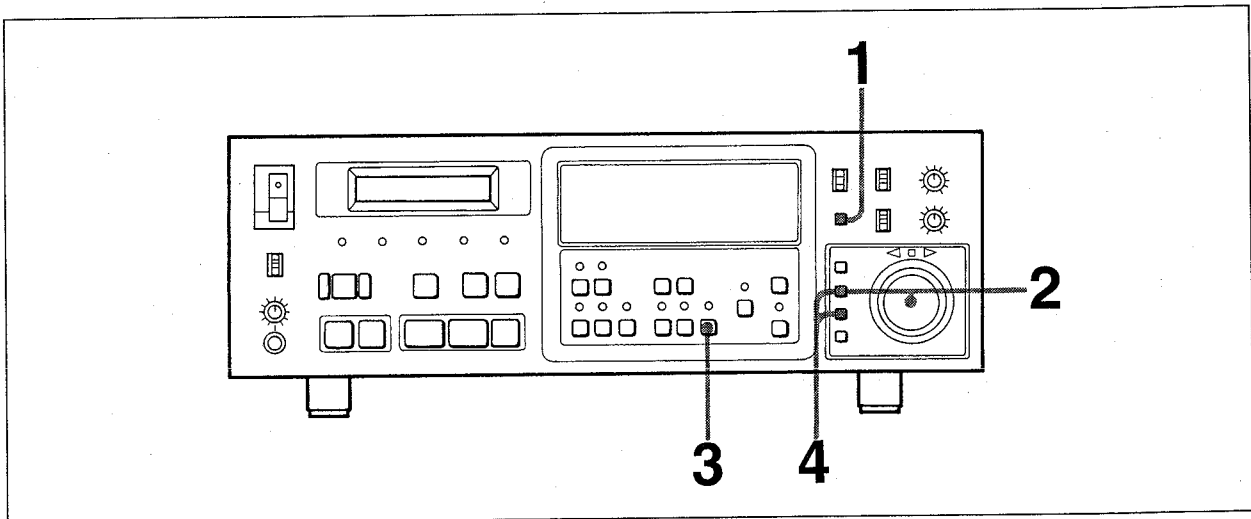
Renumbering Program numbers

1 Press the DISPLAY key and set the display to "rEno ---".

r̄Eno * * *

Initial value (01 to 799) of Program number
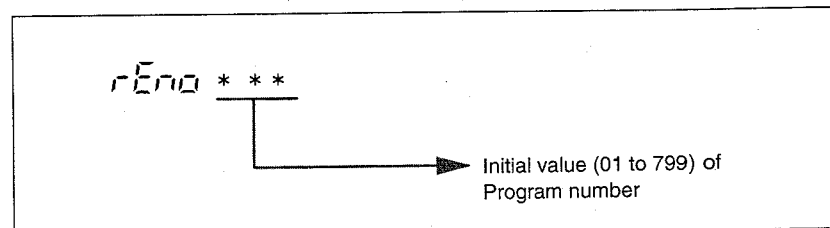
2 To set the initial value, turn the search dial while holding the DATA key down.

You can set any value between 01 and 799 as the initial value.

You don't need to press the SET key.

> **To increase the initial value:** Turn the search dial clockwise.
> **To decrease the initial value:** Turn the search dial counterclockwise.
> **To reset the initial value to "01":** Press the RESET key while holding the DATA key down.

3 Press the INSERT SUB key.

The recording mode changes to insert subcode mode.

4 Press the SET key while holding the DATA key down.
The unit rewinds the tape to the beginning, then searches for the
Start IDs. It then writes the Program numbers sequentially from the
initial value. When the tape reaches the end, the unit rewinds the
tape. If, for example, you set the intial value to "100", the unit
writes the Program numbers counting 100, 101, 102 and so on.
The unit displays the following data.
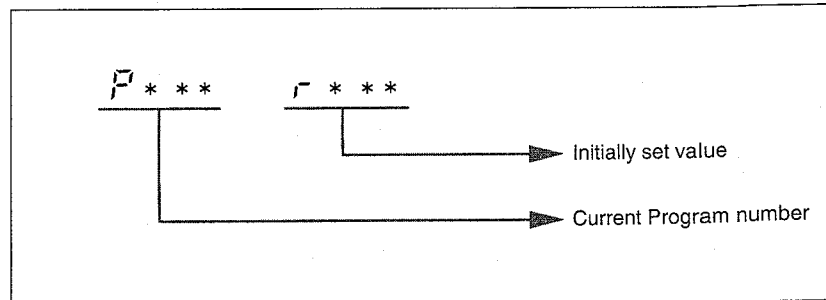
When the unit finishes renumbering or when you insert renumbering
by pressing the STOP key, the initial value returns to "01".

Note

If the recording Program number exceeds 799, the unit records "0AA"
(invalidity) onto the tape. Locating to Program number "0AA" is
impossible.

4-2-1. Playback Procedures
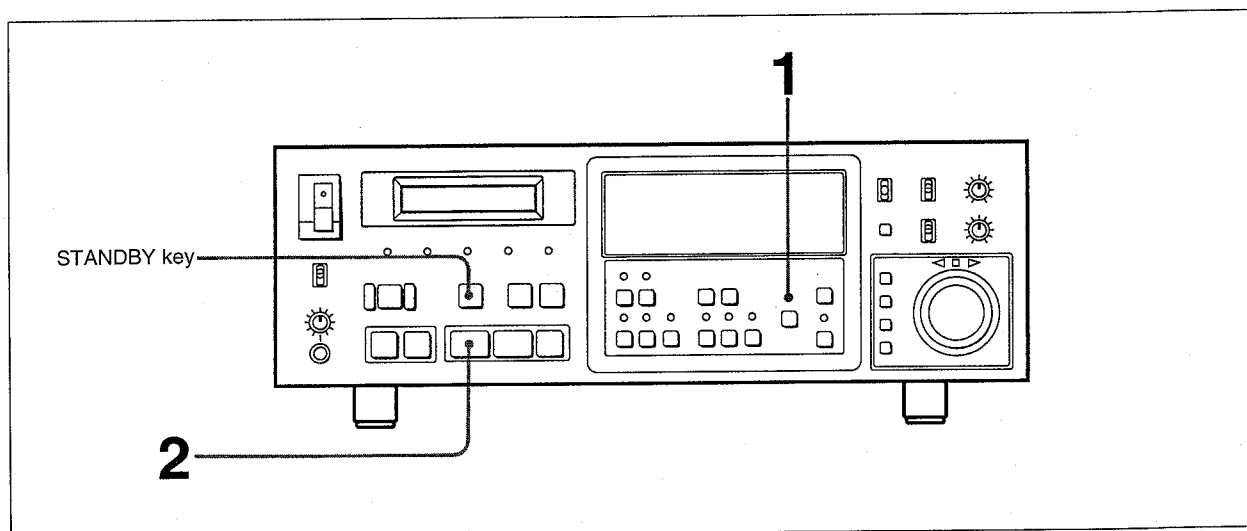
STANDBY key

Playback procedure

1 Check that the INPUT MONITOR indicator is turned off.

2 Press the PLAY key.
The PLAY key lights and playback begins.

About the STANDBY key
The head drum operation changes as follows every time you press the STANDBY key:

When the key is turned on (standby on): The head drum is rotating.
In this state, the time needed to start playback after you press the PLAY key is reduced.
If you leave the head drum rotating without doing any operation, it automatically stops after about 3 minutes. This is to protect the tape from damage.

When the key is turned off (standby off): The head drum stops.

You can locate a point on a tape in either of the following two cuing modes, while monitoring the playback sound.

- **Shuttle mode**
  While cuing, the playback speed changes according to the position of the search dial within a range of 1/5 to 16 times normal speed in both the forward and reverse directions.
- **Jog mode**
  While cuing, the playback speed changes according to the rotation speed of the search dial within a range of 1/5 to 3 times normal speed in both the forward and reverse directions.

Setting cue mode
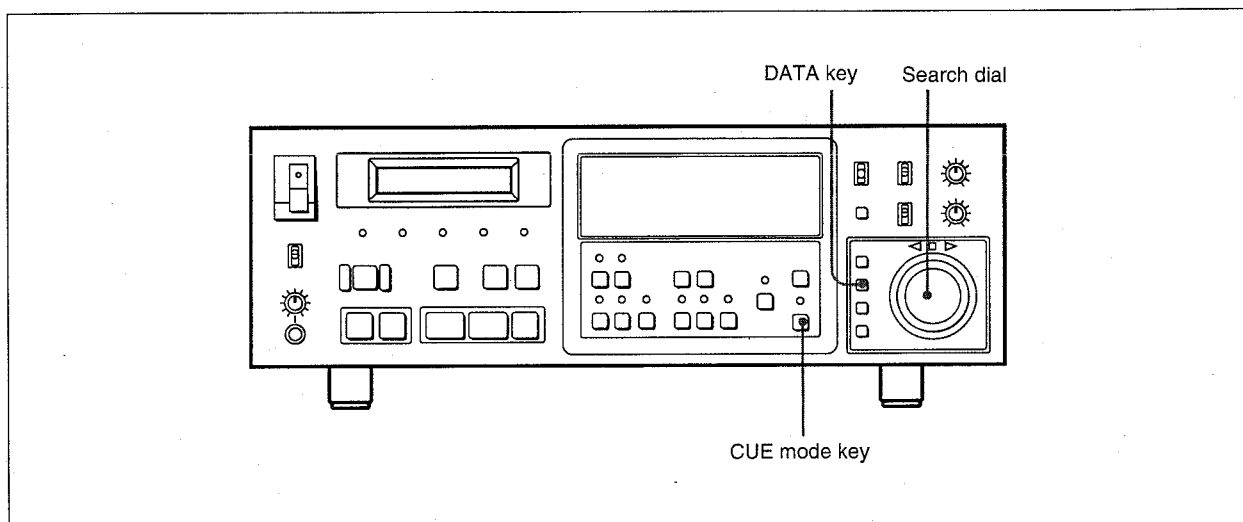
Cue mode setting and the search dial

To select shuttle mode
Press the CUE mode key.
The indicator lights and the tape stops momentarily (cue mode).
The unit enters shuttle mode.

To select jog mode
While the unit is in shuttle mode, press the DATA key of the dial menu keys. The unit enters jog mode.

By pressing the DATA key again, the unit returns to shuttle mode.
The unit also indicates the cue speed on the display.

Cuing

Shuttle mode

The playback speed while cuing changes according to the position of the search dial. Turn the search dial to change the tape speed.
The following figure shows the search dial, which adjusts the playback speed.
The fastest speed is 16 times normal speed, so even if you keep turning the dial, it doesn't go any faster.
According to the playback direction, either FWD indicator or REV indicator lights while cuing the tape.
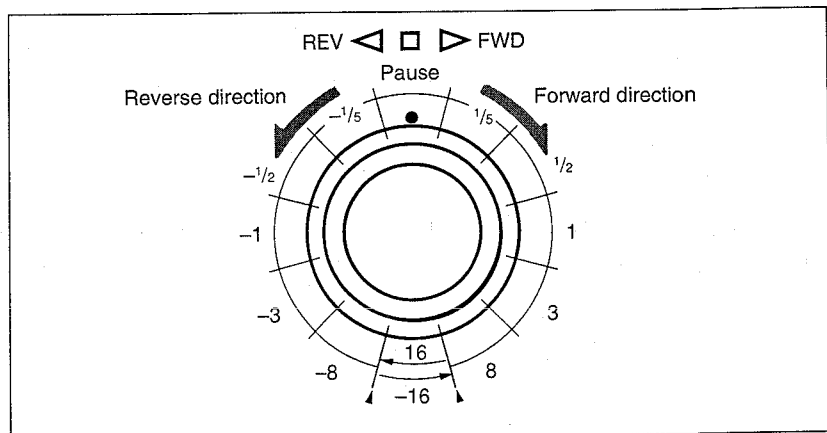
The search dial and the playback speed

Jog mode

While cuing, the playback speed changes according to the rotation speed of the search dial.

Tape protection

At the center point "●", the tape is in pause mode and the indicator "□" lights. This condition lasts only about 10 seconds to protect the tape from damage, and then the recorder enters the standby ON mode.
While cuing, the unit indicates the cue speed on the display.
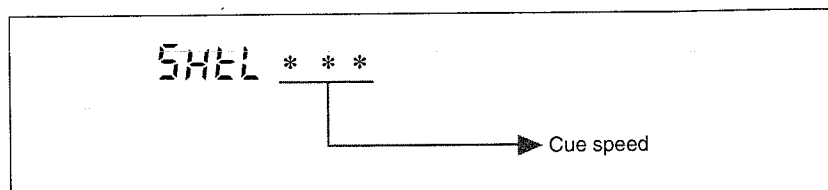
The meaning of the display contents are shown below.

SHtL: Shuttle mode
JoG: Jog mode

StL: Still (Pause)
0-2: $^1/_5$ normal speed
0-5: $^1/_2$ normal speed
1: Normal playback speed
3: 3 times normal speed
8: 8 times normal speed
16: 16 times normal speed
--- : The unit is not in the cue mode.

The CUE mode key is disabled during recording to prevent its accidental operation.

Getting out of cue mode

Press one of the tape transport control keys such as the PLAY key or STOP key or press the CUE mode key again to get out of the cue mode. The indication on the display returns to normal display mode. When you press the CUE key again to get out of the cue mode, the unit enters the STOP mode (with the factory setting).
You can change the tape transport mode, which the unit enters after the cue mode, to the playback mode by using "AFtr cuE (AFTER CUE)" of the Setup menu.

See the section on "AFtr cuE (AFTER CUE)" (page 5-83) in Section 5-3-3 "Setup Menu" for the procedure for changing the tape transport mode.

This unit can locate a specific tape point quickly. The "time code locate" locates a desired point using the time code, the "start ID locate" locates the IDs on the tape, and the "Program number locate" locates the Program number of the IDs on the tape which have been set beforehand.

Time code location

The unit locates the point displayed on the input/set data display area. You can set the point by:
- pressing the MARK key while listening to the playback sound, or
- using the DISPLAY key menu to set the time code if you know the exact time code to be located.

To set the locate point using the MARK key — LOCATE POINT
While listening to the playback sound, you can store a time code in memory. The stored time code will be used as the locate point.
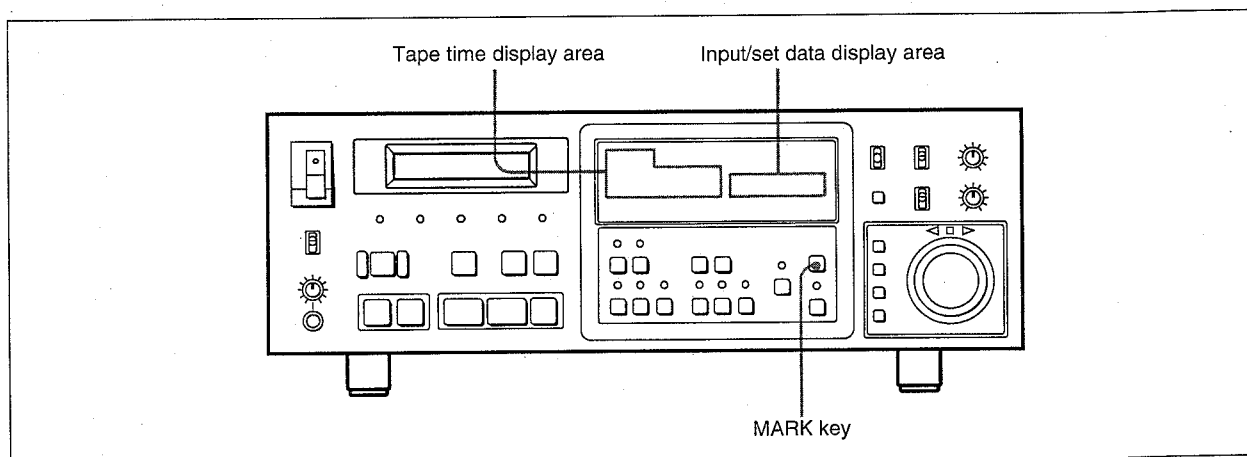
Setting the locate point with the MARK key

Press the MARK key while monitoring the playback sound and the display in the tape time display area.
The time code of the point appears in the input/set data display area as the locate point.
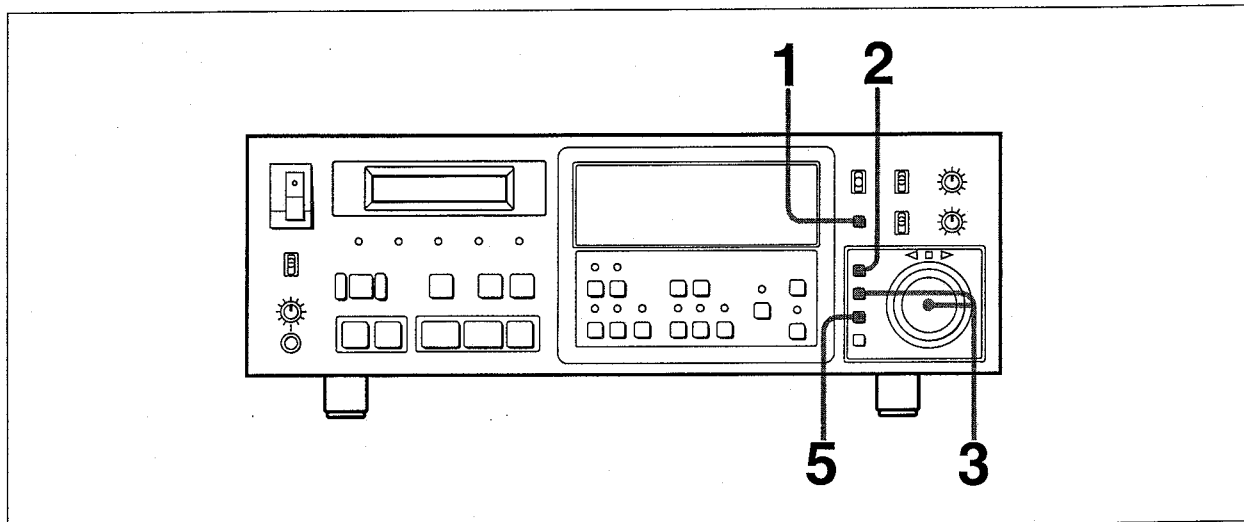
Setting the locate point

1 Press the DISPLAY key and set the display to "LOCATE POINT".

2 Press the MENU key.
The displayed digit flashes and every time you press the key, the flashing digit moves to the right (H → M → S → F → H...).

3 Turn the search dial while holding the DATA key down to set the data for the flashing digit.
To increase the number: Turn the search dial clockwise.
To decrease the number: Turn the search dial counterclockwise.

4 Repeat steps **2** and **3** until you complete the setting for all digits.

5 Press the SET key.

Setting the locate point value back to "0" — How to reset
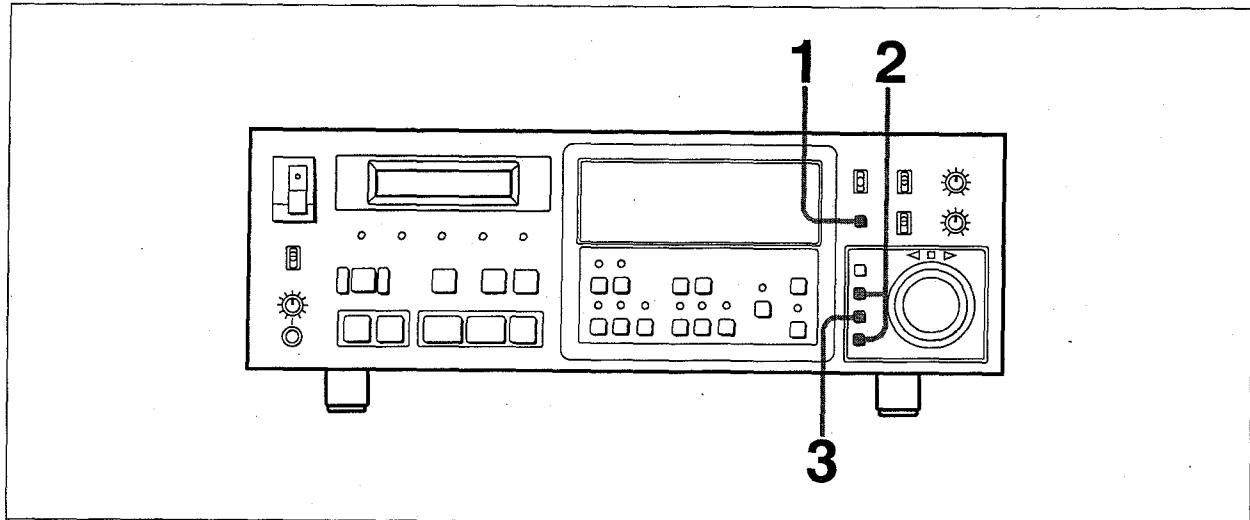
Resetting the locate point value

1 Press the DISPLAY key and set the display to "LOCATE POINT". This operation puts the unit into the locate point set mode.

2 Press the RESET key while holding the DATA key down. The numbers in all digits are set to "0"

3 Press the SET key. The flashing stops and the locate point value is set to "0".

Locating procedure
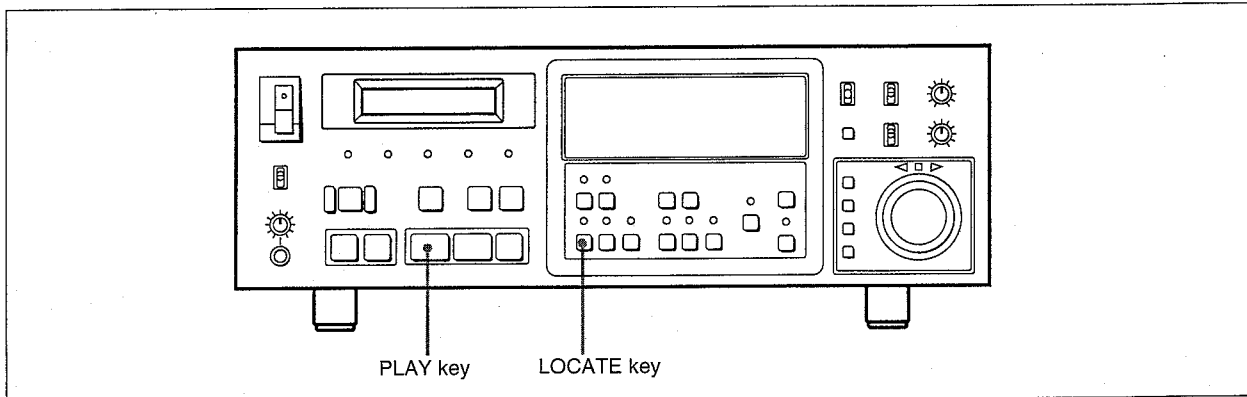
PLAY key   LOCATE key

Time code location

Press the LOCATE key after setting the locate point.
The tape finds the point and stops.

If you want to start playback right after location, press the PLAY
key when you press the LOCATE key, or during the search operation.

Time code repeat playback

The unit can repeatedly play back a portion between an IN and OUT point, set using the preset menu.

The IN and OUT points, set using the "in Pt" and "out Pt" (IN POINT and OUT POINT) preset menus, can also be used for automatic punch-in/punch-out during chasing.

To set the IN and OUT points from the preset menu, follow the procedure below.

Perform operation **2** or **2(1)**, **2(2)** and **2(4)** for step **2**.
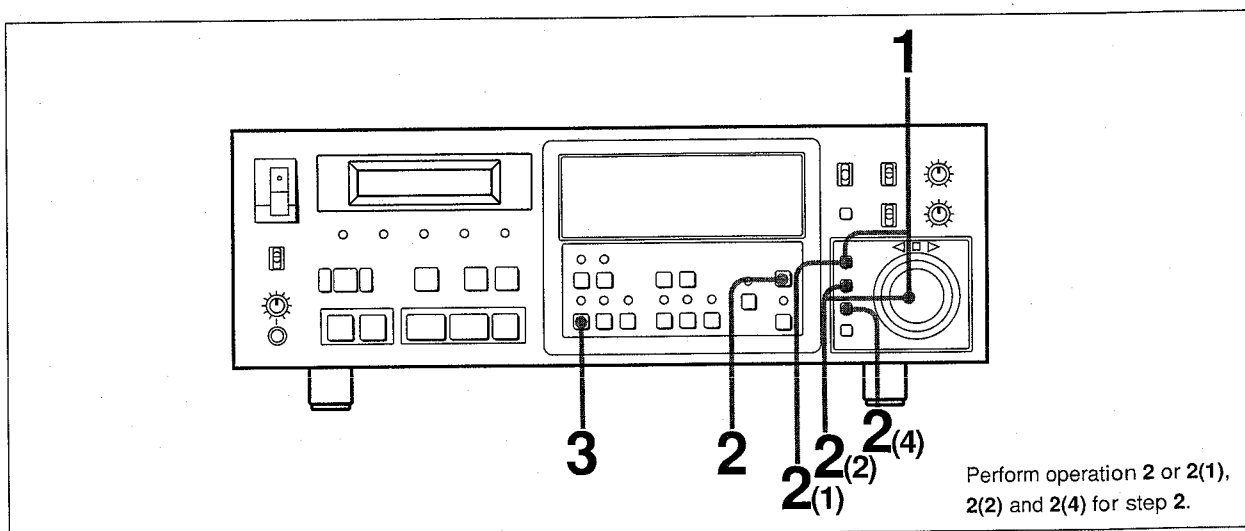
Setting the IN and OUT points from preset menu

1 Turn the search dial while holding down the MENU key and set the display to "in Pt" or "out Pt".
If the displayed set value is invalid, "in Pt" or "out Pt" flashes.

2 **To set the time code of the locate point as the IN or OUT point**
Press the MARK key. The time code of the locate point currently set is set as the locate point of the IN or OUT point.

(Continued on next page)

To set the desired time code

(1) Press the MENU key as many times as necessary, such that the digit to be set flashes. Every time you press the key, the next digit is selected.

(2) Turn the search dial while holding down the DATA key to set the value of the flashing digit.

(3) Repeat steps (1) and (2) until you have set the IN or OUT POINT.

To reset an IN or OUT point to "0", press the DATA key while holding down the RESET key.

The data for all digits is reset to "0".

(4) Press the SET key.

The display stops flashing and setting terminates.

3 Press the LOCATE key while the IN or OUT point, set as described above, is displayed.

The LOCATE indicator lights and the unit plays back the portion between the IN and OUT point 16 times.

For three seconds after starting playback, "rEPEAt PLAy **" is displayed. (** indicates the number of times the portion is to be played back.)

If you press the LOCATE key and either the IN point or OUT point is invalid, the start and end points of the playback will be as follows.

If the IN point is invalid, the playback will start from the beginning of tape.

If the OUT point is invalid, playback will end at the end of tape.

Start ID search operation — Start ID locate

This section explains how to search for the Start ID that has been recorded on the tape beforehand.
When you perform ID locating, the unit indicates both the number of the Start ID to locate and the current Program number on the display.

See the section under "Writing and erasing Start ID/Skip ID/End ID" (page 4-23) for how to write the Start ID.

You can select the following types of start ID locate from the setup menu.
- The unit locates the previous or next start ID upon detecting a skip ID during playback.

See the section under "Selecting whether to automatically locate a start ID when detecting a skip ID—"Auto StoP" (AUTO STOP)" (on page 5-63) in section "5-3-3 Setup Menu" for details of how to select the type of locate.

- Locating a start ID automatically upon inserting a cassette

See the section "Selecting whether to automatically locate a start ID when the cassette is inserted—"Auto SrcH" (AUTO SEARCH)" (on page 5-65) in section "5-3-3 Setup Menu" for details of how to select the kind of locate.

- Locating a position ahead of the point where the ID is recorded

See the section "Selecting whether to perform preroll-stop at start ID locating and program number locating—"PrEroLL" (on page 5-66)in section "5-3-3 Setup Menu" for details of how to select the kind of locate.

Start ID locate

START ID PREVIOUS key
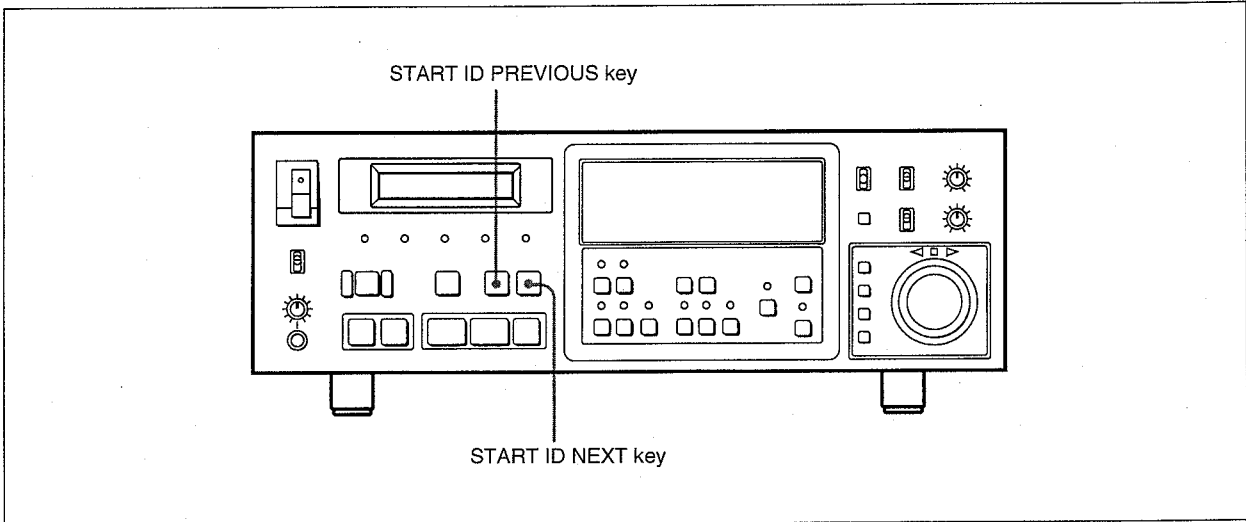
START ID NEXT key

Start ID locate

PREVIOUS: Locates the previous Start ID as you press the key.
NEXT: Locates the next Start ID as you press the key.

Press the START ID NEXT key or START ID PREVIOUS key.
Number of Start ID to locate Current Program number

$\mathcal{P}$ * * *　　　* * *

　　　　　　　　　　　　　▶ Number of Start ID to locate

　　　　　　　　　　　　　▶ Current Program number
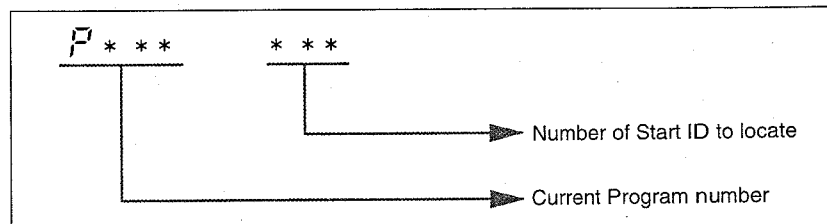
If you want to start playback right after locating to the point,
press the PLAY key with the START ID NEXT or PREVIOUS key,
or while the unit is searching for the point.

Program number/End ID locate

1 Press the DISPLAY key to set the display to "P -- L --".

P * * * L * * *

> Program number (01 to 799), End ID or blank part

> Current Program number
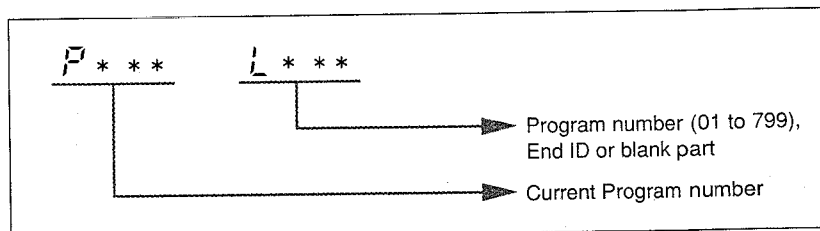
2 While holding the DATA key down, turn the search dial to set the Program number locate point.

To increase the Program number: Turn the search dial clockwise. If you exceed 799, the "End" indication appears.

To decrease the Program number: Turn the search dial counterclockwise. If you exceed "bLA", the "End" indication appears.

To reset the Program number to "01": Press the RESET key while holding the DATA key down.

You don't need to press the SET key.

3 Press the LOCATE key.
The unit performs the Program number locate function.
If you perform the Program number locate function in memory start mode (the MEMORY START indicator blinks), the unit stores the sound around the locate point to sound memory and enters memory start standby mode.

Notes

- You can select either time code locate or Program number locate.
  - When the unit shows the Program number on the display: The unit performs Program number locate.
  - When the unit shows the IN or OUT point: The unit performs time code repeat playback.
  - When the unit displays any other number: The unit performs time code locate.
- The unit cannot locate properly on a tape on which Program numbers are not recorded in order. Renumber the Program numbers from the tape beginning in this case.

Searching for an unrecorded part (blank)
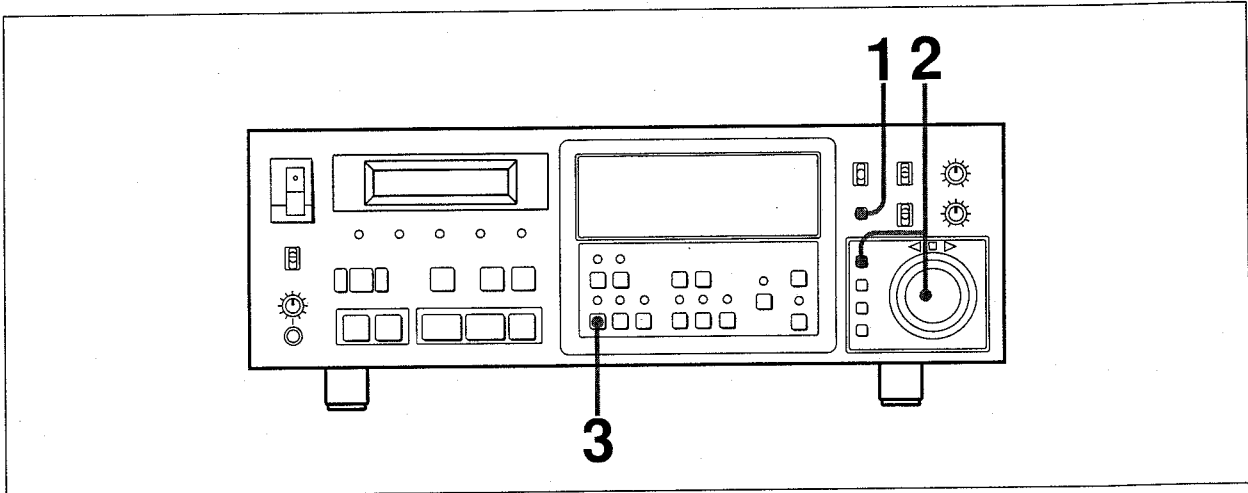
Searching for a blank part

1 Press the DISPLAY key to set the display to "P--L--."

P * * *   L * * *

→ Program number (01 to 799), end ID or blank part

→ Current program number
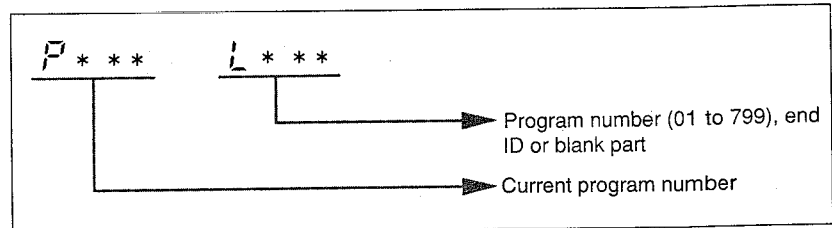
2 While holding the DATA key down, turn the search dial to set the blank search.
When the search dial is turned clockwise, "bLA" appears after "End".
When the search dial is turned counterclockwise, "bLA" appears after 01.
You don't neet to press the SET key.

3 Press the LOCATE key.
The unit starts searching and stops two seconds ahead of the blank part.

Note

The unit can not search for blanks of less than one minute and 30 seconds duration.

4-3-1. Controlling the Playback Speed — Variable-Speed Playback

Using the search dial, you can change the playback speed. Variable-speed playback is possible within a range from −12.5% to +12.5% (in increments of 0.1%) of normal playback speed when the SYNC signal selector is set to "INT". When the SYNC signal selector is set to "VIDEO" from −12.4% to +12.4% (in increments of 0.2%) of normal playback speed. You can operate either in the playback or stop mode. To change the speed with the search dial, it is easier if you operate in the playback mode.
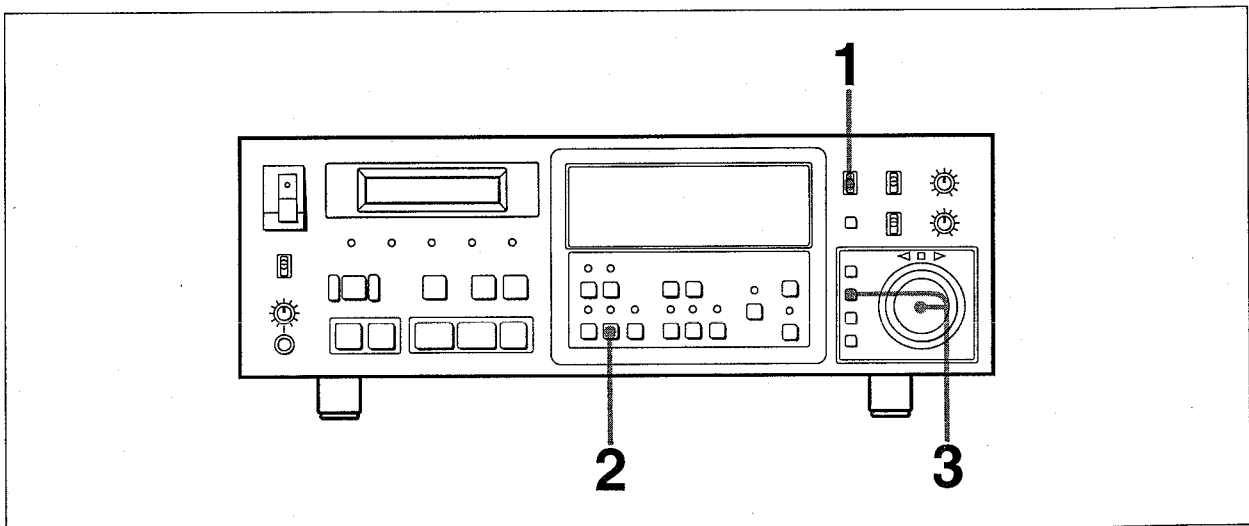
Controlling the playback speed

1 Check that the SYNC signal selector is set to "INT" or "VIDEO".
(To select "VIDEO", there must be a video sync signal from the REF VIDEO INPUT connector on the connector panel coming.)

2 Press the VARI SPEED key.
The indicator lights, and the unit goes into the variable-speed playback mode.

3 Turn the search dial while pressing the DATA key.
   If you turn the dial clockwise: the playback speed increases.
   If you turn the dial counterclockwise: the playback speed decreases.
The current speed displays in the input/set data display area.
Monitor the speed using the display and the playback sound.
Stop the dial at the desired speed.

To set the speed to "00.0%" (normal speed) within the variable-speed playback mode
Follow one of the procedures below to set the speed to "00.0%".
(Even if the tape is at the normal playback speed, the unit is still in the variable-speed mode.)
- Turn the search dial till the display in the input/set data display area shows "00.0%", or
- Press the RESET key while holding the DATA key down.

To release the variable-speed playback mode
Press the VARI SPEED key.
The indicator goes off and the unit returns to the normal playback mode. In variable-speed playback mode, the last speed you set remains in effect. When you turn the unit on again, this speed remains until you set a new speed.

Memory-backup of variable speed value
The set variable speed value is retained even when the power is turned off.

4-3-2. Controlling the Recording Speed — Variable-Speed Recording

You can vary the recording speed by –0.2% to +0.2%.
Perform variable-speed recording in the following cases.
- When using an AES/EBU signal or word signal outside of ± 100 ppm as a sync signal.
- When performing +0.1 % recording with a film-based system (time code 30Hz DF)
- When performing –0.1 % recording with an HDVS-based system (sampling frequency 47.952 kHz)

For +0.1 % recording with a film-based system and –0.1% recording with an HDVS-based system, a sampling converter (required by the previous version of the software) is not necessary.

To use an AES/EBU-format signal or word sync signal outside of ± 100 ppm as the sync signal
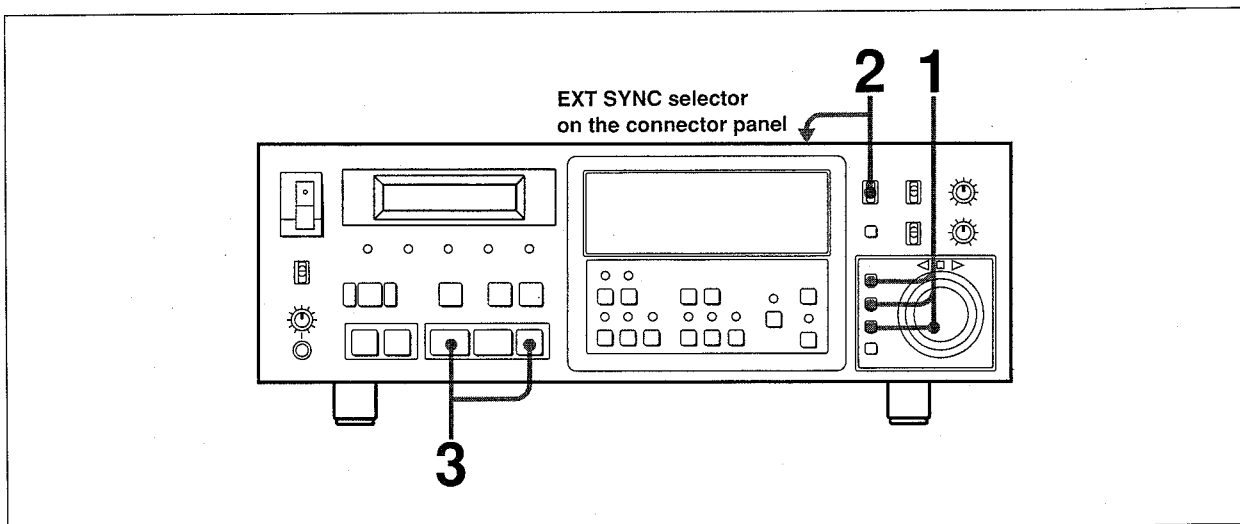
Recording using an AES/EBU-format signal or word sync signal as the sync signal

1 Set "SYnc nrr" of the setup menu to "oFF" (wide).

See the section "Selecting the lock frequency range in external synchronization mode — "Sync nrr" (SYNC NARROW) (on page 5-44) in section "5-3-3 Setup Menu"

2 Set the SYNC signal selector to EXT.
Set the EXT SYNC selector on the connector panel (rear) as follows.
When an AES/EBU-format signal is input: set the selector to D-I.
When a word sync signal is input: set the selector to WORD.

3 Press the PLAY key while holding down the REC key.
The unit starts recording.
When the signal is within ± 0.2% and other than 0%, "VARI SPEED" flashes on the display.

To perform +0.1% recording (time code 30HzDF) with a film-based system
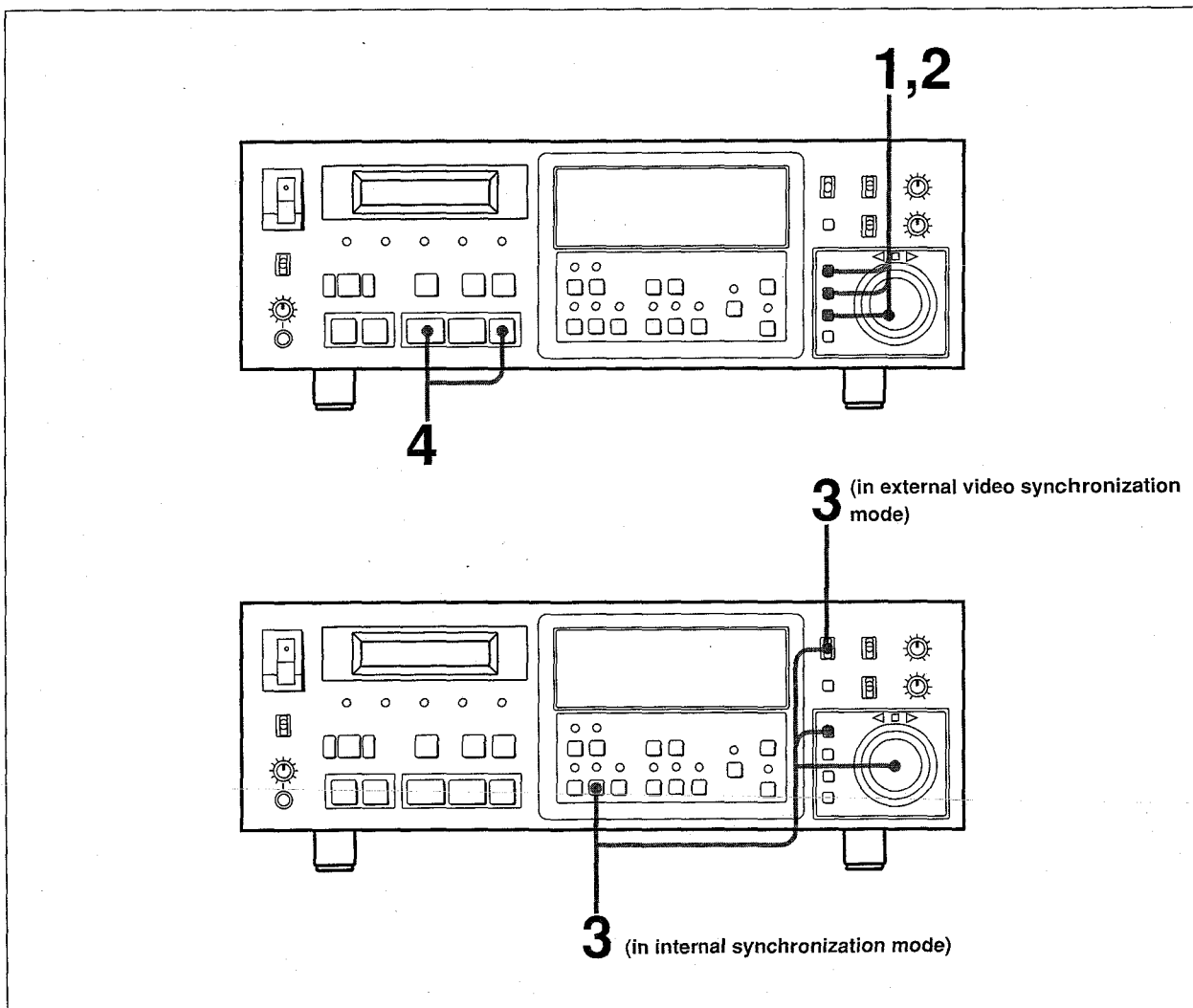
+0.1% recording with a film-based system

1 Set "rEF tcF" of the setup menu to "2997 dF".

See the section "Selecting the time code format and the reference video signal frequency — "rEF tcF" (REFERENCE TIME CODE FORMAT) (on page 5-39) in section "5-3-3 Setup Menu"

2 Set "SYnc nrr" of the setup menu to "oFF".

See the section "Selecting the lock frequency range in external synchronization mode — "Sync nrr" (SYNC NARROW) (on page 5-44) in section "5-3-3 Setup Menu"

3 In internal synchronization mode
(1) Set the SYNC signal selector to "INT".
(2) Press the VARI SPEED key.
(3) Turn the search dial while holding down the DATA key to set the speed value to 0.1%.
(4) Set "rEc tc" of the setup menu to "int" when recording the time code.

See the section "Selecting recording time code (when the DABK-7030 board is installed)—"rEc tc" (REC TIME CODE) in section "5-5-3 Setup Menu"

In external video synchronization mode
(1) Set the SYNC signal selector to "VIDEO" and input the 30-Hz video synchronization signal. The vari-speed value is set to 0.1%.
(2) To record the external time code, input a time code of 30 frames/sec. and DF mode, locked to the input video sync signal.

4 Press the PLAY key while holding down the REC key.
The unit starts recording.
"VARI SPEED" flashes on the display
Sampling frequency: 48 kHz becomes 48.048 kHz and 44.1 kHz becomes 44.1441 kHz
Output AES/EBU sampling frequency ID: 48 kHz for 48 kHz and 44.1 kHz for 44.1 kHz
Recorded time code ID: 29.97 Hz DF

When playing back a recorded tape at a constant speed (0%)
The played-back time code is in 29.97 Hz DF mode and the program time is lengthened by 0.1%.
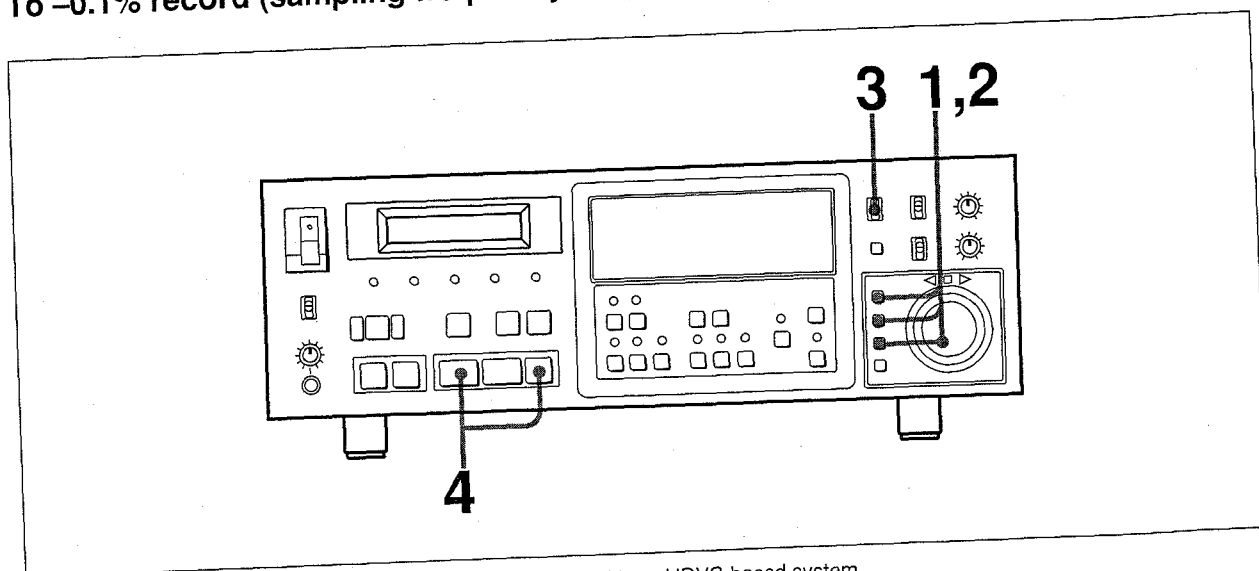
–0.1% recording with an HDVS-based system

1 Set "rEF-tcF" of the setup menu to "30 ndf".

See the section "Selecting the time code format and the reference video signal frequency — "rEF tcF" (REFERENCE TIME CODE FORMAT) (on page 5-39) in section "5-3-3 Setup menu".

2 Set "SYnc nrr" of the setup menu to "oFF" (WIDE).

See the section "Selecting the lock frequency range in external synchronization mode — "Sync nrr" (SYNC NARROW) (on page 5-44) in section "5-3-3 Setup Menu".

3 Set the SYNC signal selector to "VIDEO" and input the 29.97 Hz video synchronization signal. The vari-speed value is set to –0.1%. To record an external time code, input the 29.97 frame/sec. time code and NDF mode, locked to the input video sync signal.

4 Press the PLAY key while holding down the REC key.
The unit starts recording.
"VARI SPEED" flashes on the display
Sampling frequency: 48 kHz becomes 47.952 kHz and 44.1 kHz becomes 44.056 kHz
Output AES/EBU sampling frequency ID: 48 kHz for 48 kHz and 44.1 kHz for 44.1 kHz
Recorded time code ID: 30 Hz NDF

When playing back a recorded tape at a constant speed (0%)
The played-back time code is in 30 Hz NDF mode and the program time is shortened by 0.1%.

The PCM-7050/7030 is able to output the playback signal immediately after you press the PLAY key. Using this Memory start function the unit first outputs the sound stored in the sound memory. Then the unit stores the playback signal in the sound memory and reproduces after the previous data from its memory. In this way, this unit outputs the audio signal accurately and instantly.

For the PCM-7030, this function is effective only when the optional DABK-7032 board is installed.

Memory start

Note

To use the sound memory for memory start, set the memory mode to "StArt" beforehand.

See the section "Selecting memory mode for memory start — "StArt" (START) in section "5-3-3 Setup Menu"
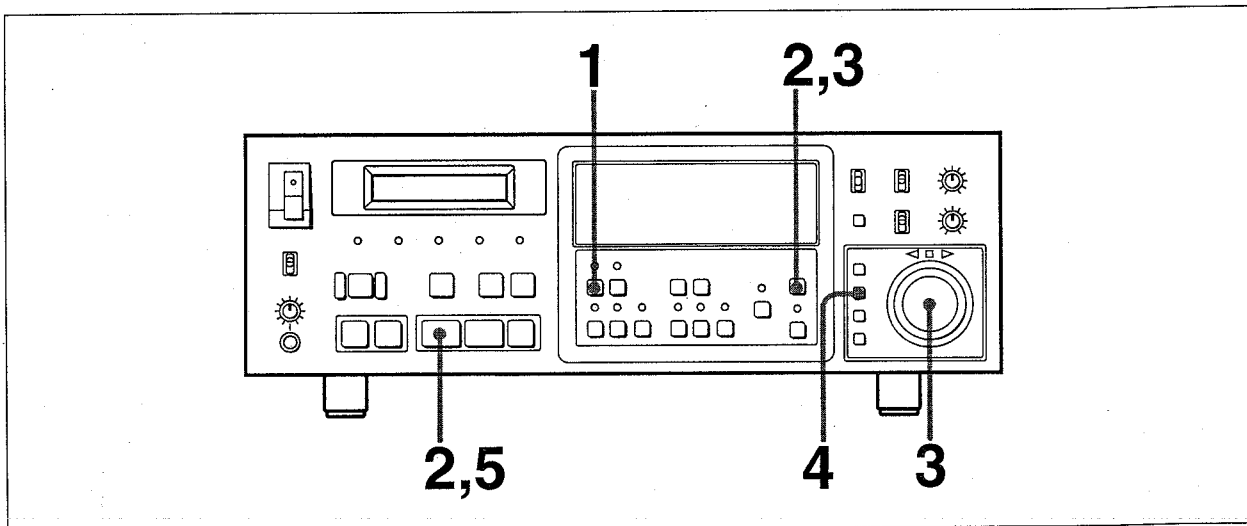
Memory start

1 Press the MEMORY START key in the stop mode.
The indicator flashes and the PCM-7050/7030 enters the memory start mode.

2 Play back the tape, and press the MARK key at the desired point.
The tape stops after storing the sound in memory.
The PLAY key flashes.

3 Using the search dial, find the precise start point (Memory jog), then press the MARK key.
The precise start point is set.

4 Press the DATA key to rehearse the sound in the memory.
The playback of the sound in memory starts from the point.
(The tape doesn't move as this is the memory rehearsal.)
If you want to change the start point, repeat step **3**.

Time code output during memory jog and memory rehearsal
During memory jog and memory rehearsal, the time code is output from the TIME CODE OUTPUT connector of the connector panel.

Notes
- When "GEn out" of the setup menu is set to "on", the time code is not output.
- The same time code (frozen time code) is output continuously when you stop memory jog (still mode). At this time, the unit may display a different time code value from that displayed by any connected equipment.

Time code display in memory jog/memory rehearsal
During memory jog and memory rehearsal, the unit displays the time code corresponding to the output audio signal in the tape time display area, and the memory start point in the input/set data display area. Thus, you are always aware of the time code of the sound stored in memory.

5 Press the PLAY key to play back the tape.
The MEMORY START indicator and the PLAY key light.

- To carry out Memory start, make sure that the time code is recorded on the tape.
- The unit displays/outputs a time code in line with the audio signal, after calculating the difference between the playback time code on the tape and the time code of the sound data in sound memory. The unit calculates the difference in about 1.5 seconds after memory start playback begins.
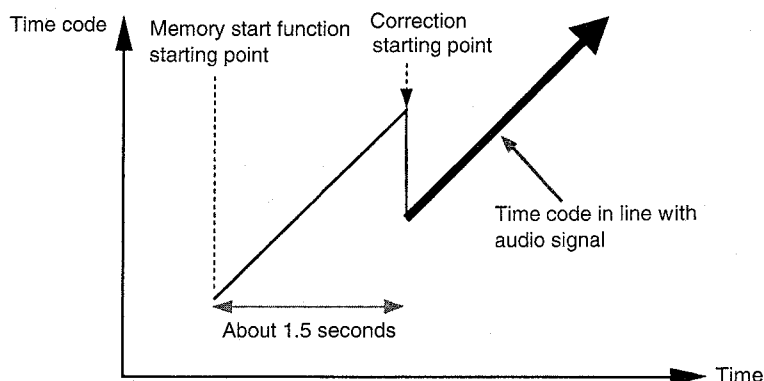
- While the MEMORY START indicator is on (in the playback operation in the memory start mode), the MARK key works to set a locate point and the time code displayed in the tape time display area appears in the input/set data display area when you press the MARK key.

The capacity of the sound memory
The capacity of the sound memory differs from the sampling frequency as shown in the table below.

Sampling frequency	Capacity
48 kHz	2.73 seconds
44.1 kHz	2.97 seconds

When you reset the start point
After setting the start point, you may want to reset the start point using the MARK key. If you want to deviate from the range in the table above, this unit will restore the new sound data in the memory. Note that this operation may take about 10 seconds.

Adjusting the output timing of the memory start
In the range of 0 to 500 milliseconds, you can select the time required by the unit to output the sound after you press the PLAY key.

See the section on "is dLY-t (MEMORY START DELAY TIME)" page 5-76) in Section 5-3-3 "Setup Menu" for more details.

The cross fade time is set to 10ms at the factory. You can set this fade time within the range of 0 to 999 ms.

See the section "Cross-fading time in sync recording mode" on page 4-14.

Releasing the memory start mode

1 Press the STOP key to stop playback.

2 Press the MEMORY START key.
The indicator goes off and the unit exits memory start mode.

To find the precise start point in jog mode
You can set the sound memory to the mode that enables you to find the precise start point using memory jog. In this case, you can not perform memory start, but you can use this mode to find the edit point from the video editor using memory jog and to determine the time code of the audio signal.

See the section "Selecting memory mode at memory start — "StArt" (START) (on page 5-99) in section "5-3-3 Setup Menu"

Using the memory start function together with the search operation

If you conduct the search operation using the LOCATE key or the START ID NEXT/PREVIOUS key in the memory start mode, the tape goes to the locate point immediately, and automatically stores the sound data around that point into the sound memory. When the unit enters the memory start standby mode, it operates in the same way as the normal memory start.
You can setup a search operation that uses the start ID from the setup menu.

See the section "Selecting whether to automatically locate a start ID when detecting a skip ID — "Auto StoP" (AUTO STOP)" (on page 5-63), "Selecting whether to automatically locate a start ID when a cassette is inserted —"Auto SrcH" (AUTO SEARCH)" (on page 5-65) and "Setting whether to preroll stop before the point where an ID is write at start ID locating or program-number locating — "PrEroLL" (PREROLL)" (on page 5-66) in section "5-3-3 Setup Menu"

Using the memory start function, you can write ID more precisely. This function is effective regardless made with setup menu "StArt" item.

For an explanation of setting the ID to be recorded, see the section "Selecting the ID to be written and erased — "id rEc" (ID REC)" (on page 5-62) in section "5-3-3 Setup menu".
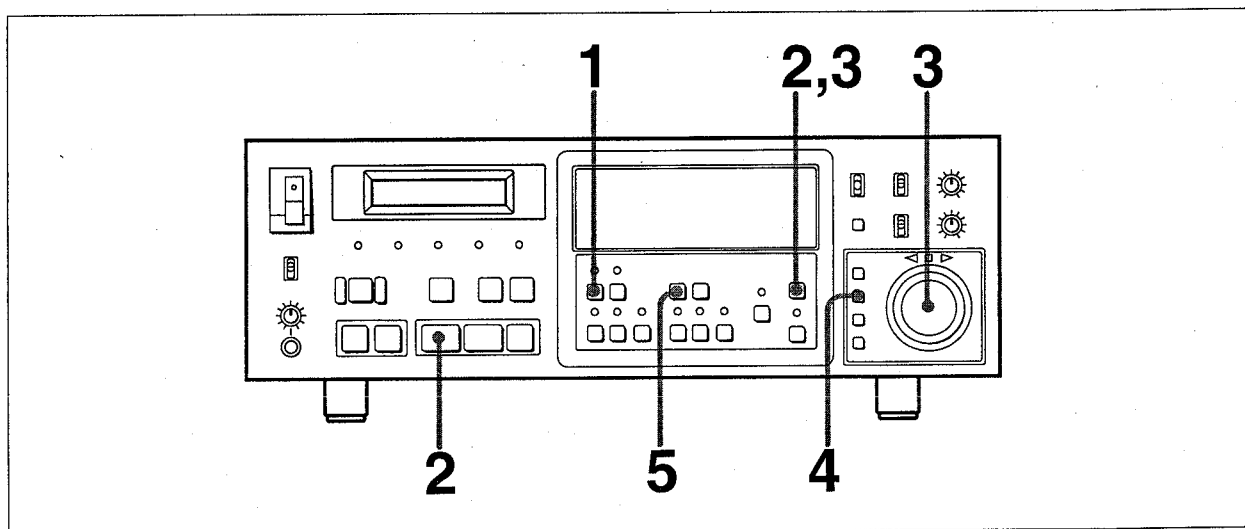
Writing an ID

Record mode setting: INSERT SUB

1 Press the MEMORY START key when the unit is in the stop mode.
The indicator flashes and the unit enters the memory start mode.

2 Play back the tape and press the MARK key at the point where the selected ID is to be written.
The tape stops after running a short while, and the PLAY key flashes.
However, the PLAY key does not flash when "Edit-E" or "Edit-c" is selected from setup menu "StArt".

3 Find the precise point you want to write the selected ID using the search dial, and press the MARK key at that point.

4 Press the DATA key for memory rehearsal and check the sound.
If the selected point where you are going to write the selected ID is not proper, repeat step **3**.

5 Press the START ID WRITE key.
The tape starts playback again after rewinding, and the REC key and the PLAY key light from the point set by the MARK key, and the unit writes the selected ID.
The tape stops automatically after recording.

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This function is supported only by the PCM-7050.
Using the spot erase function, you can eliminate noise from the tape.
First you specify the section. Then the unit stores the section in the sound memory. After you designate the exact point to eliminate the noise, the unit records a muting signal on the section.
This method enables the unit to eliminate the noise within a few milliseconds. When you spot erase, make sure that the time code is recorded on the tape.
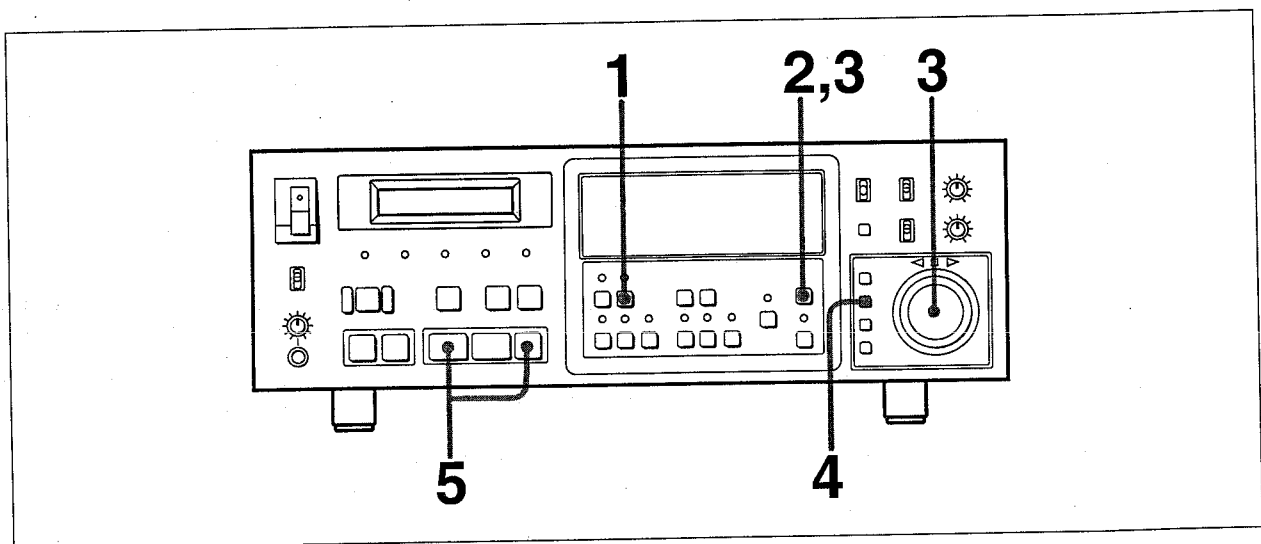
Spot erase

Record mode setting: INSERT AUDIO

1 Press the SPOT ERASE key.
The indicator lights and the PCM-7050 enters the spot erase mode.

2 Press the MARK key at the point to be erased during the playback operation.
The tape stops after storing the sound data of the tape portion in memory. The REC key and the PLAY key flash.

3 Find the precise point with noise to be erased using the search dial, then press the MARK key just before the point.
The unit displays the time code corresponding to the output audio signal.

Pressing the MARK key sets the in point. The out point is set automatically.
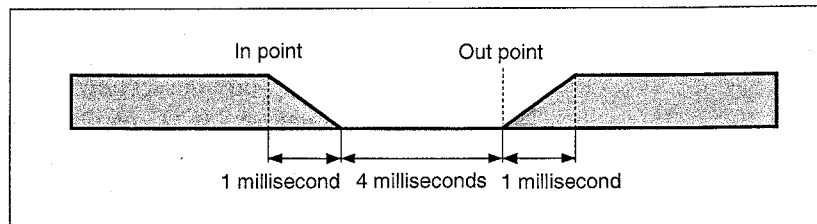
Fade-in/fade-out time: 1 millisecond
Difference between in and out point: 5 milliseconds
Fade-in/fade-out time is automatically set to 1 ms regardless of the setting made with preset menu "croS FAdE" item.

When you connect the unit to the RM-D7300 Digital Audio Editor and perform spot erase, you can set the duration between the in point and out point to within 6 seconds, and the cross-fade time (0 milliseconds to 999 milliseconds) as necessary.

4 Press the DATA key for memory rehearsal to make sure the noise is eliminated.
If the noise is not eliminated properly, repeat step **3** (Memory jog). When the unit finishes memory-jog/memory-rehearsal, the unit displays the time code of the erasing start point.

5 Press the PLAY key while holding the REC key down.
The unit eliminates the noise. The REC key and the PLAY key light while the unit carries out the spot erase. Then the tape stops automatically.

Note

To carry out spot erase, make sure that the time code is recorded on the tape.

Releasing the spot erase mode
Press the SPOT ERASE key.
The indicator goes off.
The fade-in/fade-out time can be reset, to the value set before entering spot erase mode, by pressing the SPOT ERASE key in step **1**.

In the chase synchronization mode, the time code is fed from the TIME CODE INPUT connector on the connector panel (optional DABK-7030). The PCM-7050/7030 operates in sync with this time code. This is called the chase synchronization (or for short "Chase"). This function is available only when the optional time code reader/generator (DABK-7030) is installed in the unit.

Procedure
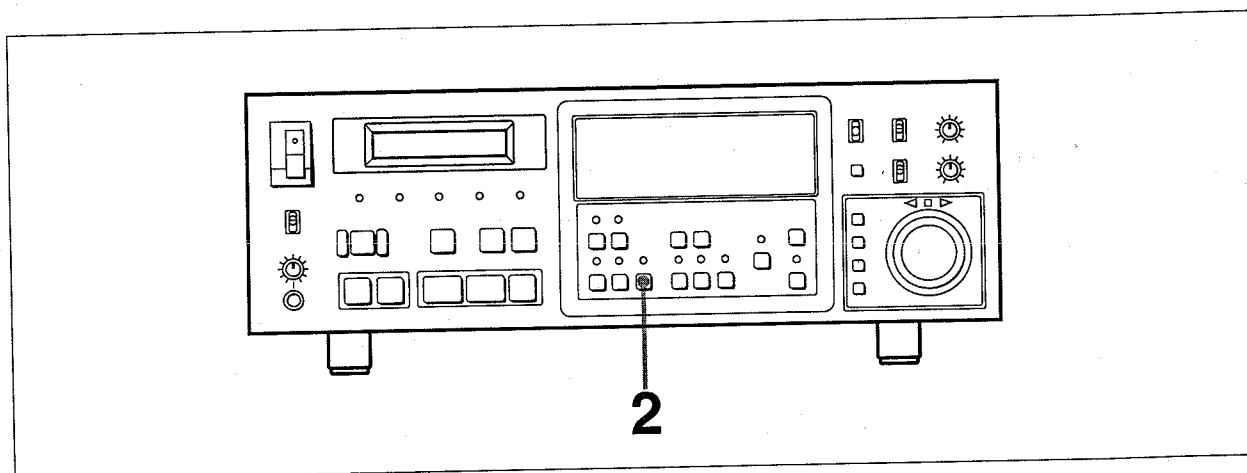
Chase

1 Play back the tape on the master unit.

2 Press the CHASE key on the slave unit (PCM-7050/7030). The indicator lights and the PCM-7050/7030 is now ready to chase. The unit displays the chase offset time.
When the playback time code of the PCM-7050/7030 synchronizes with the external time code (Chase lock), the SERVO lock indicator on the front panel lights.

Releasing the chase mode
Press the one of the tape transport control keys (STOP, PLAY, FF etc).
The CHASE mode indicator goes off.
You can also release chase mode by pressing either the CHASE key or the EJECT key.

For details, see the section on "cHASE-S" (CHASE SWITCH) in the explanation of the setup menu (page 5-47).

Note

In the RE-CHASE OFF mode, once the unit has synchronized with the external time code, the unit releases chase synchronization automatically, and the CHASE indicator goes off.

For more details on the RE-CHASE OFF mode, see page 5-45.

Setting the chase offset time

In the chase mode, you can designate a certain time difference between the two time codes (chase offset time). Setting the chase offset time, the PCM-7050/7030 always chases the external time code at the interval of the offset time.
You can set the chase offset time in units of hour, minutes, seconds, frames, and bits.
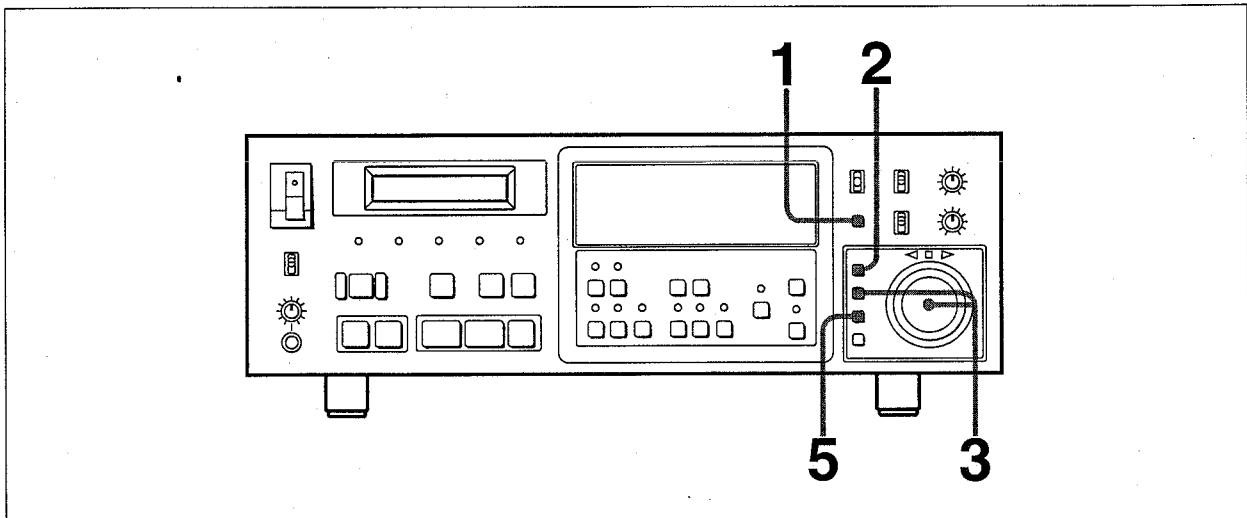
Setting the chase offset time

1 Press the DISPLAY key until "CHASE OFFSET" appears in the display.

2 Press the MENU key.
The "H" digits flash.
Every time you press the MENU key, the flashing place moves from the left to the right ("H"→"M"→"S"→"F"→"B"→"H"...).

3 Turn the search dial while holding the DATA key down to set the data for the flashing digit.

The ± 12-hour system is applied to set the chase offset time.

If the playback time code is behind the input time code, set the chase offset time to a negative value.

If the input time code is behind the playback time code, set the chase offset time to a positive value. ("+" does not appear on the display.)

To increase the number: Turn the search dial clockwise.

To decrease the number: Turn the search dial counterclockwise.

Digits "S", "F" and "B" are linked so that incrementing or decrementing through "00" for "F" or "B" will change the others appropriately. (In that case, you need not press the SET key in step **5**.) Digits "H", "M" and "S" are not linked in this manner and must be adjusted independently.

4 Repeat steps **2** and **3** to set all the units.

5 Press the SET key.

Setting the chase offset time back to "0" – How to reset
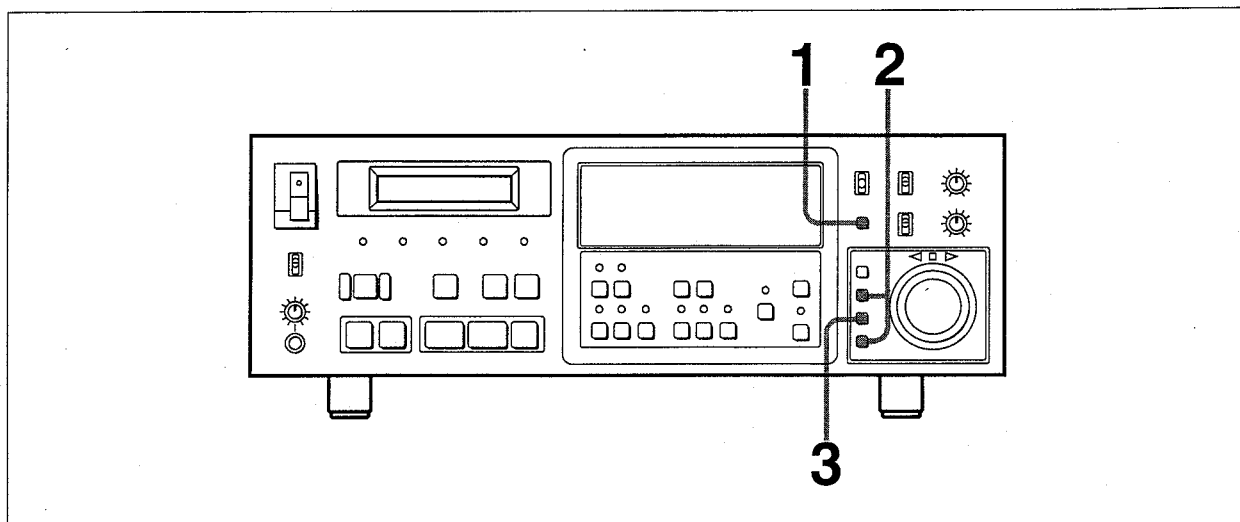
Resetting the chase offset time

1 Press the DISPLAY key and set the display mode to "CHASE OFFSET".
This operation puts the unit into the chase offset time set mode.

2 Press the RESET key while holding the DATA key down.
All digits are set to "0".

3 Press the SET key.
The flashing stops and the chase offset time is set to "0".

Note

When the SMPTE drop frame time code is used and the time code whose frames are dropped is set, the time code whose frames are not dropped is displayed automatically.
Example: When "00ʜ01ᴍ00s00ꜰ" is set, "00ʜ01ᴍ00s02ꜰ" appears.

Instant chase lock

In instant chase lock mode, the unit calculates the time difference between the external (input) time code and the unit's playback time code, or between the external time code and the previously set locate point time code.
Using the value as the chase offset time, the unit automatically enters the chase mode.
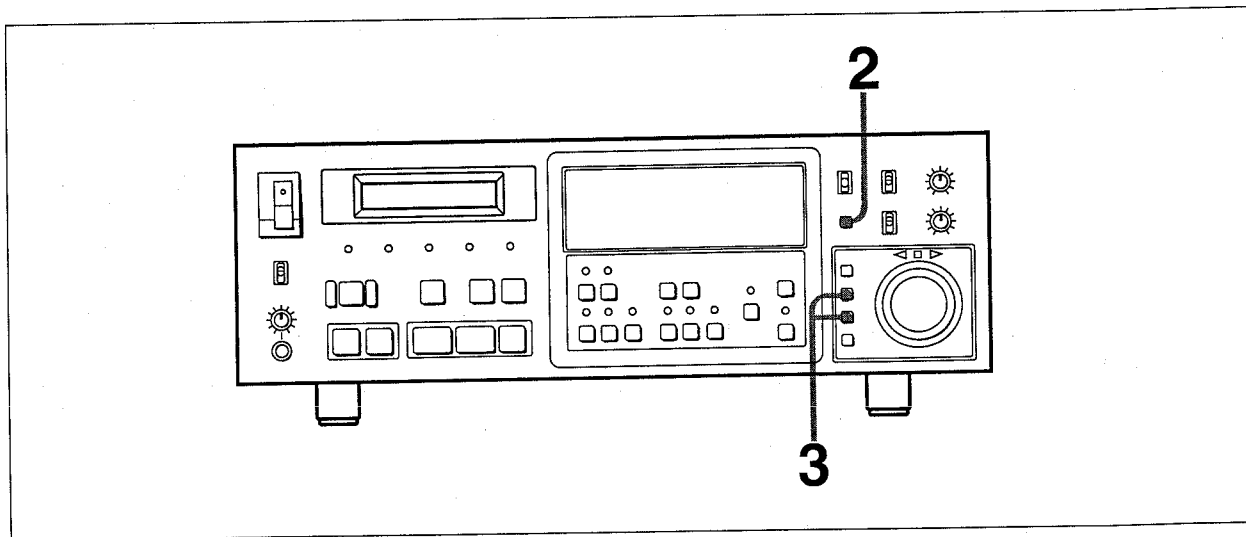
Instant chase lock

To chase the external time code value to make the playback time code value agree with the external time code

1 Play back the tape on the master unit and on the PCM-7050/7030.

2 Press the DISPLAY key.
"CHASE OFFSET" appears in the DISPLAY key menu display area.

3 Press the SET key while pressing the DATA key.
The CHASE mode indicator lights and the PCM-7050/7030 enters the chase mode.
The unit calculates the offset value and displays it in the input/set data display area.
Chase offset value = Playback time code value – External time code value

To chase the external time code value to make the locate point time code value agree with external time code

1 Play back from the master unit and input the locate point time code value to the PCM-7050/7030.

2 Press the DISPLAY key of the PCM-7050/7030 and set the display to "LOCATE POINT" (time code).

3 Play back from the PCM-7050/7030, and set the locate point time code value of the PCM-7050/7030 corresponding to the picture or sound of the master unit by using the MARK key or the search dial. To set the locate point precisely, also use the memory start function.

4 Press the SET key while holding the DATA key down.
The CHASE mode indicator lights and the PCM-7050/7030 enters chase mode. The unit calculates the offset value and displays it in the input/set data display area.
Chase offset value = Locate point time code value – External time code value

Note

The offset value is automatically calculated in units of bits.

Correcting the input time code using the instant chase lock function

The unit cannot read a time code input at less than 1/16 times normal speed. Thus, the time code of the precise start point found by the master unit may differ from that displayed on the unit. In such a case, the unit cannot calculate the correct chase offset value. This instant chase lock function allows the unit to correct the input time code. When you want to make a correction, follow the procedure below.

Note

Perform the following operation when "EXT TIME CODE" flashes in the DISPLAY key menu display area. This indicates that the time code is not input because the connected VTR has stopped or is in still mode.
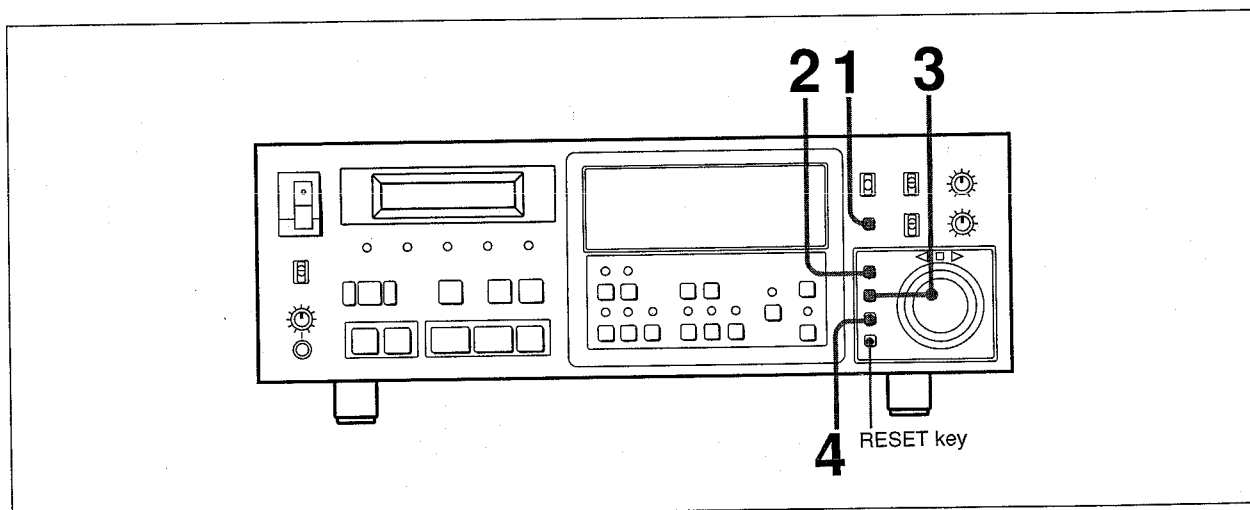
Correcting the input time code

1 Press the DISPLAY key and set the display to "EXT TIME CODE."

2 Press the MENU key.
The "H" digits flash. Every time you press the MENU key, the selected (flashing) character is shifted one position to the right.

3 To set the value of the flashing digit, turn the search dial while holding down the DATA key.
Repeat step **3** to set the remaining digits.

4 Press the SET key to store the time code.
All digits flash.
The unit performs the instant chase lock using this set time code.

To clear the set value
Press the RESET key while holding down the DATA key. The set value is cleared and the input time code is displayed in the time code indication area.

Selecting one of the chase modes

The PCM-7050/7030 has three kinds of chase modes (re-chase ON/OFF). Using the setup menu, you can choose one of them.

- **"on-1" (ON-1):** In this mode, the unit always runs in chase mode. However, when the time code on the tape is not synchronized with the input time code or when the time code is missed, the unit plays back at variable speed within +/– 0.2% after locking.
- **"on-2" (ON-2):** In this mode, the unit always runs in chase mode. Once it has synchronized with the external time code, however, the unit enters normal playback mode. Select this mode to record after chase synchronization while rechasing.
- **"OFF":** The unit releases chase synchronization once it has synchronized with the external time code, then enters normal playback mode.

See the section on "rE-cHASE (RE-CHASE)" (page 5- 45) in Section 5-3-3 "Setup Menu" for more details.

Selecting the timing of sound output when chasing

You can select the timing of sound output for chase synchronization from the following using "cHASE-Au (CHASE AUDIO)" of the Setup menu:
- When the unit enters the playback mode. (With this setting, you can hear the sound in variable-speed playback.) Factory set at this position.
- When the unit locks to the incoming external time code. (With this setting, you cannot hear the sound in variable-speed playback.)

See the section on "cHASE-Au (CHASE AUDIO)" (page 5-46) in Section 5-3-3 "Setup Menu" for the procedure for selecting the timing of sound output.

Punching-in/punching-out during rechasing

The unit can punch-in at a specified IN point and punch-out at an OUT point during synchronous playback (rechasing). You can also perform rehearsal prior to actual recording.
The edit accuracy is ± 0 frames.
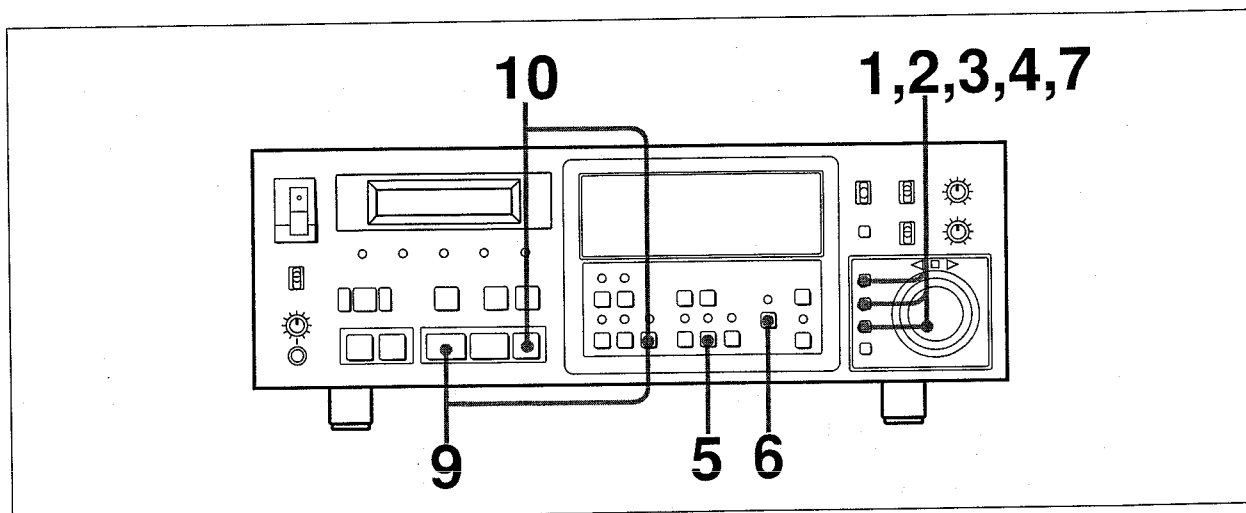
1 Set the setup menu "SYnc rEc" to "on".

See the section "Selecting whether to record in monitor recording mode or in sync recording mode — "SYnc rEc" (SYNC REC)" (on page 5-35) in section "5-3-3 Setup Menu".

2 Set the setup menu "rE-cHASE" to "on-1" or "on-2".

See the section "Selecting the chase mode (when a DABK-7030 is installed) — "rE-cHASE" (RE-CHASE)" (on page 5-45) in section "5-3-3 Setup Menu".

3 Set the chase offset time.

For details of how to set the chase offset time, see "Setting the chase offset time" on page 4-58.

4 Set the IN point and OUT POINT.

For details of how to set the IN and OUT points, see the section "Time code repeat playback" (4-37) in section "4-2-3 Locating Specific Points on a Tape."

5 Press the INSERT AUDIO key to select insert audio mode.

6 When the INPUT MONITOR indicator is lit, press the INPUT MONITOR key to select reproduction mode.

7 Set the input signal gain and cross-fading time, if necessary.

For details of how to set the input signal gain, see the section "Setting the input signal gain and upper limit of the input signal gain" (on page 4-11) and "cross-fading time in sync recording mode" (on page 4-14) in section "4-1-5 Basic Recording Procedure".

8 Play back the tape on the master unit.

9 To rehearse, press the PLAY key while holding the CHASE key down.
"cHASE rEH" appears on the display. The unit enters chase mode. The sound played back from the master unit is output from the MONITOR output connectors at the IN point after locking. The reproduced sound of the PCM-7050/7030 is output from the MONITOR output connectors at the OUT point.

10 Play back the tape on the master unit. To perform automatic punch-in and punch-out, press the REC key while holding down the CHASE key.
"cHASE Edit" appears on the display and the REC indicator flashes. The unit enters chase mode and punches in at the IN point after synchronization, then punches out at the OUT point.

Note

The unit has to synchronize with the external time code at the IN point, thus operate the master unit such that the unit starts playing back 5 to 6 seconds prior to the IN POINT.

Notes on chase synchronized operation

- To operate in chase mode, the master unit and the slave unit should be using the same kind of continuous time code without any blanks.
- As the tape speed of the PCM-7050/7030 gets to 150 times normal speed in the FF or REW mode while the time code output is always at a normal speed, the output time code jumps after 5 continuous frames except in normal playback mode. Therefore, when you use the PCM-7050/7030 as the master unit and other equipment (such as Sony's DASH format digital audio recorder) as the slave unit, the chase synchronization may not operate effectively. We recommend you use the PCM-7050/7030 as the slave unit to use its chase function, especially when you use the unit with the PCM-3402 digital audio recorder. Note that in this case, the unit will start chasing after the PCM-3402 enters the playback mode because the PCM-3402 does not output time code during fast forward or rewind mode.
- When the unit locks to the incoming external time code while chasing in the insert audio mode, the unit will start recording audio signals (Chase synchronized recording function). Note that the audio signals recorded in monitor recording mode will be played back about 135 milliseconds behind the playback time code. In this case, select sync recording mode. No delay between the time code and audio signal appears.

Chapter 5. Menu Operations

The changeable functions of this unit have been factory-set to default positions.
This chapter explains how to change the default settings (factory-settings) using the search dial. Read through this chapter if you want to change the default settings. Then read the "Dial Menu Operations" section.

5-1. About the Menus

5-1-1. General Description of the Menus

The menus available with this unit are categorized into two groups. One is the DISPLAY key menu and the other the dial menu. The dial menu is further divided into three groups: preset menu, display menu, and setup menu. The DISPLAY key menu changes the displayed contents using the DISPLAY key. The dial menu changes the settings of the functions of the PCM-7050/7030 using the search dial. The following chart shows the menu configuration.

```
                        ┌─────────────┐
                        │    Menu     │
                        └──────┬──────┘
              ┌────────────────┴────────────────┐
    ┌─────────┴─────────┐              ┌─────────┴─────────┐
    │ DISPLAY key menu  │              │     Dial menu     │
    └───────────────────┘              └─────────┬─────────┘
                            ┌────────────────────┼────────────────────┐
                   ┌────────┴────────┐  ┌────────┴────────┐  ┌────────┴────────┐
                   │   Preset menu   │  │  Display menu   │  │   Setup menu    │
                   └─────────────────┘  └─────────────────┘  └─────────────────┘
```
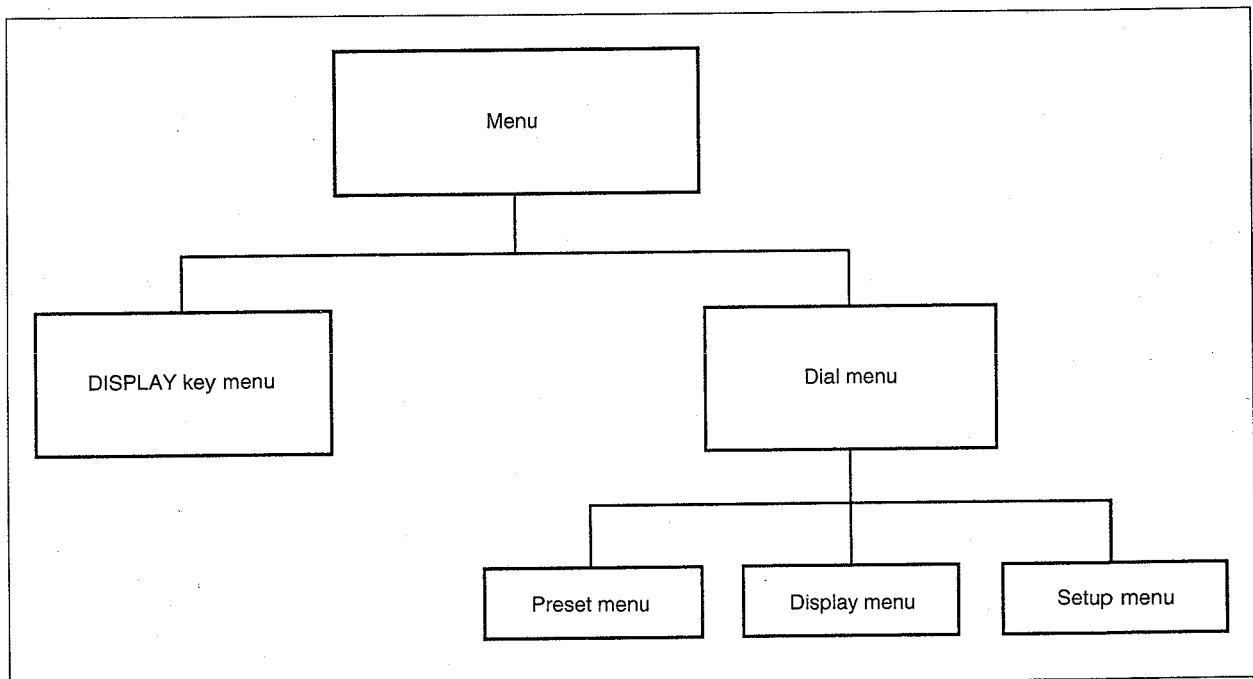
Menu configuration

The following charts list the DISPLAY key menu and the dial menu (preset menu, display menu, and setup menu). See Section 5-1-2 "Menu List" (page 5-5) for a general description of each menu. For the details of each menu, see the referred pages within each menu list that appears on the following pages 5-2 through 5-4.

DISPLAY key menu

LOCATE POINT (page 4-34)

LOCATE POINT (Program number) (page 4-41)

Pno (page 4-26)

ELAPSE (page 5-14)

U-BIT (When "ub-diSP" is ON) (page 5-15)

EXT TIME CODE* (page 5-16)

EXT U-BIT* (When "ub-diSP" is ON) (page 5-17)

GEN TIME CODE (page 5-18)

GEN U-BIT (When "ub-diSP" is ON) (page 5-19)

GEN SET TIME (page 4-18)

GEN SET U-BIT (When "ub-diSP" is ON) (page 4-21)

VARI SPEED (page 4-44)

CHASE OFFSET* (page 4-58)

RENUMBER (page 4-27)

CUE SPEED (page 4-31)

* Functions available only when an optional time code reader/generator board (DABK-7030) is installed.

Dial menu

```
┌─────────────────────────────────────────────────────────────┐
│                          Dial menu                          │
│  ┌───────────────────────────────────────────────────────┐  │
│  │                     Preset menu                       │  │
│  │                                                       │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "in Pt" (IN POINT) (page 4-37)            │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "out Pt" (OUT POINT) (page 4-37)          │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│ →│    │ "GAin rnG" (GAIN RANGE) (page 4-13)       │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "inP GAin" (INPUT GAIN) (page 4-12)       │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "croS FAdE" (CROSS FADE) (page 4-14)      │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  └───────────────────────────────────────────────────────┘  │
│                           ↓                                 │
│  ┌───────────────────────────────────────────────────────┐  │
│  │                    Display menu                       │  │
│  │                                                       │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "Error" (ERROR) (page 5-21)               │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "cAution" (CAUTION) (page 5-22)           │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "Au rEF" (AUDIO REFERENCE) (page 5-23)    │      │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │  ┌─────────────────────────────────────────────────┐  │  │
│  │  │ "Au rEF-P" (AUDIO REFERENCE PEAK HOLD) (page 5-24)│ │  │
│  │  └─────────────────────────────────────────────────┘  │  │
│  │                      ↓                               │  │
│  │    ┌───────────────────────────────────────────┐      │  │
│  │    │ "[dSP Grd]" (DISPLAY MENU GRADE) (page 5-25)│     │  │
│  │    └───────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │      ┌─────────────────────────────────────────┐      │  │
│  │      │ "LaSt Err" (LAST ERROR) (page 5-26)     │      │  │
│  │      └─────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │      ┌─────────────────────────────────────────┐      │  │
│  │      │ "Ecc" (ERROR CORRECTION CODE) (page 5-27)│     │  │
│  │      └─────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │      ┌─────────────────────────────────────────┐      │  │
│  │      │ "tAPE tcF" (TAPE TIME CODE FORMAT) (page 5-29)│ │  │
│  │      └─────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │      ┌─────────────────────────────────────────┐      │  │
│  │      │ "oPtion" (OPTION) (page 5-30)           │      │  │
│  │      └─────────────────────────────────────────┘      │  │
│  │                      ↓                               │  │
│  │      ┌─────────────────────────────────────────┐      │  │
│  │      │ "Hour-t" (HOUR TIIME) (page 5-31)       │      │  │
│  │      └─────────────────────────────────────────┘      │  │
│  └───────────────────────────────────────────────────────┘  │
│                           ↓                                 │
│  ┌───────────────────────────────────────────────────────┐  │
│  │  Setup menu (Continued on the next page)              │  │
│  └───────────────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────────────────┘
```

5-1-2. Menu List

DISPLAY key menu

The following table shows the functions of the DISPLAY key menu.

DISPLAY key menu

DISPLAY key menu	Functions
LOCATE POINT	Sets the time code of the locate point for the time code locate operation.
LOCATE POINT (Program number)	Set the Program number for the locate point or search for the End ID.
PNO	Sets the program number to be recorded simultaneously with a start ID.
ELAPSE	Displays the tape running time (elapsed time). You can reset this value using the RESET key.
U-BIT	Displays the user bit read from the tape during playback.
EXT TIME CODE	Displays the external time code input to the unit.
EXT U-BIT	Displays the user bit of the external time code input to the unit.
GEN TIME CODE	Displays the internal generator time code.
GEN U-BIT	Displays the user bit of the internal generator time code.
GEN SET TIME	Sets the start time value of the internal time code generator.
GEN SET U-BIT	Sets the contents of the user bit of the internal time code generator.
VARI SPEED	Sets the tape speed for variable-speed playback, and displays the set data.
CHASE OFFSET	Sets the offset value for chase synchronized operation, and displays the set data.
RENUMBER	Renumbers the Program numbers into order, or numbers a Start ID which was not recorded with a Program number.
CUE SPEED	Displays the cue speed when the unit is in cue mode.

Dial menu

The following lists the functions of the preset menu, display menu, and setup menu. These are subset menus of the dial menu.

Preset menu

Preset menu		Functions
The display that appears	Meaning of the display	
"in Pt"	IN POINT	Sets and displays the IN and OUT points to be used by the auto punch-in/ punch-out function during rechasing and time code repeat playback.
"out Pt"	OUT POINT	
"GAin rnG"	GAIN RANGE	Sets the upper limit of the input gain setting range.
"inP GAin"	INPUT GAIN	Sets and displays the gain of the analog input signal and digital input signal.
"croS FAdE"	CROSS FADE	Sets the cross fade time.

Display menu

Display menu		Functions
The display that appears	Meaning of the display	
"Error"	ERROR	Displays the errors of the unit using numbers.
"cAution"	CAUTION	Displays the warnings of the unit using numbers.
"Au rEF"	AUDIO REFERENCE	Displays the signal level readings of the level meters using numbers.
"Au rEF-P"	AUDIO REFERENCE PEAK HOLD	Displays the peak hold level readings of the level meters using numbers.
"[dSP Grd]"	DISPLAY MENU GRADE	Selects the level of the menu display from basic display and expanded display. **bASic:** Sets to the basic display. Goes directly to the setup menu. **EnHAncEd:** Sets to the expanded display. This setting displays from "LASt Err" to "Hour-t". **Factory-set setting:** "bASic"(BASIC)
"LASt Err"	LAST ERROR	Displays the last time code which indicates the tape position where an error occurred and the erroneous data was interpolated or the audio output signals were muted.
"Ecc"	ERROR CORRECTION	Displays the signal process errors. The error which has occurred and the corresponding time code are displayed for one address.
"tAPE tcF"	TAPE TIME CODE FORMAT	Displays the format of the time code recorded on the tape.
"oPtion"	OPTION	Displays which optional boards have been installed in the unit.
"Hour-t"	HOUR TIME	Displays the accumulated head drum rotation hours (hours meter). Refer to this display to determine when to replace the head drum.

Setup menu		Functions	Factory-set position
The display that appears	Meaning of the display		
"— Sto—"	STORE	Stores the set data from the setup menu to addresses 1 through 10. You can operate the unit using one of these 10 settings (the data stored in addresses 1 through 10).	—
"— rcL—"	RECALL	You can recall each data set from the "-- Sto--" menu using the appropriate address number, and operate the unit according to the data. The recalled address remains in memory even when power is off. When the unit is turned on, that address is assigned automatically.	"FActorY"
"SEtuP"	SET UP	Automatically calls the data, set with the setup menu, at power-on. You can select the data to be called, by specifying any of user setup memory at address 1 to address 10, the factory settings, or the data set when the power was turned off. The setting remains in memory even when the power is turned off.	"LASt"
"SYnc rEc"	SYNC REC	Selects the recording mode. • **Monitor recording mode (RAW: Read After Write):** The leading heads record and the trailing heads play. (OFF) • **Sync recording mode (RMW: Read Modify Write):** The leading heads play and trailing heads record. (ON)	"on" (ON)
"tc bASE"	TIME CODE BASE	Selects the basis of the time code, which appears in the tape time display area on the display and is used for locate operation.	"Auto"(AUTO)
"rEF tcF"	REFERENCE TIME CODE FORMAT	Selects the time code format and the reference video sync signal frequency.	SMPTE (drop frame mode), 29.97 Hz for the model for the USA and Canada, or EBU, 25 Hz for the model for European countries
"rEc tc"	REC TIME CODE	Selects the time code: the external time code input to the unit or the internally generated time code.	"rEAr SEL" (REAR SELECTOR)
"PrE EP"	PRE-EMPHASIS	Activates (ON) or deactivates (OFF) the emphasis circuit for analog input signals.	"oFF"(OFF)
"SYnc nrr"	SYNC NARROW	Selects the frequency range to which the word sync can lock.	"on"(ON)
"rE-cHASE"	RE-CHASE	Selects the chase mode function.	"on –1"(ON –1)
"cHASE-Au"	CHASE AUDIO	Selects the timing to output the playback sound during chase synchronized operation.	"PLAY"

Setup menu when using the expanded menu display

| Setup menu		Functions	Factory-set position
The display that appears	Meaning of the display		
"cHASE-S"	CHASE SWITCH	Selects whether to release chase operation mode by pressing one of the tape transport control keys (such as STOP, PLAY, and FF) (ON) or by pressing either the CHASE or EJECT key. (ON-OFF)	"on" (ON)
"[SEt Grd]"	SETUP MENU GRADE	Selects the level of the setup menu display from basic display and expanded display.	"bASic" (BASIC)
"[SEt tc]"	SETUP MENU for TIME CODE	Selects whether to open or close the time code menu in the setup menu.	"cLoSE" (CLOSE)
"FrEErun"	FREE RUN	Selects the operation mode of the time code generator (REC RUN/REGEN or FREE RUN)	"oFF" (OFF) (REC RUN/REGEN mode)
"GEn out"	GENERATOR OUT	Selects the time code (selects the playback time code when OFF and selects the generator's time code when ON) output from the TIME CODE OUTPUT connector at the rear.	"oFF" (OFF)
"tc rEGEn"	TIME CODE REGENERATE	Selects whether to regenerate the external time code (ON) or not (OFF).	"on" (ON)
"rEc ub"	REC USER BIT	Selects the user bit according to the setting of the recording time code selector (TC SEL) or the user bit of the internal time code generator (INTERNAL) when recording.	"tc SEL" (TC SEL)
"ub diSP"	USER BIT DISPLAY	Selects whether to display the user bit data for the DISPLAY key menu (ON) or not (OFF).	"oFF" (OFF)
"tc dLY"	TIME CODE DELAY	Selects whether to apply the phase adjustment of the time code output to the analog audio signals (ANALOG OUTPUT) or digital audio signals (DIGITAL OUTPUT).	"d out" (DIGITAL OUTPUT)
"ELAPSE"	ELAPSE	Selects when the unit resets the elapse time: when you press the RESET key (ELAPSE), or when you press the RESET key or when the unit detects the start ID (PRoG).	"ELAPSE"
"[SEt SYS]"	SETUP MENU for SYSTEM CONTROL	Selects whether to open the setup menu of the system (OPEN) or not (CLOSE).	"cLoSE" (CLOSE)

(Note: the rows from "FrEErun" through "ELAPSE" are grouped under the vertical label "When using the expanded menu for the time code")

Setup menu		Functions	Factory-set position
The display that appears	**Meaning of the display**		
"S-id Auto"	START ID AUTO REC	Selects whether to automatically write the Start ID (ON) or not (OFF) during assemble recording.	"oFF" (OFF)
"id rEc"	ID REC	Selects the ID (start ID, skip ID or end ID) to be recorded or erased when you press the START ID WRITE/ERASE key.	"StArt id" (START ID)
"Auto Stop"	AUTO STOP	Selects whether the unit skips to the last start ID (ON-P), to the next start ID (ON-N), or do not (OFF) locate after detecting a skip ID during playback.	"oFF" (OFF)
"Auto SrcH"	AUTO SEARCH	Selects whether to locate the first start ID when you load a cassette.	"oFF" (OFF)
"PrEroLL"	PREROLL	Selects whether the unit locates the position prior to the ID record point by using the start ID locate function or program number locate function.	"oFF" (OFF)
"coPY id"	COPY ID	Selects the copy ID which will be written within the main ID.	"PEr" (PERMIT) (ID which permits copy)
"SYncPb"	SYNC PB	Selects whether to synchronize the playback time code with the phase of the input video sync signal or not during playback when an external video sync signal is input to the REF VIDEO INPUT connector and when the time code format is not set to film time code.	"EnAbLE" (ENABLE) (Synchronizes the phases.)
"rLb StoP"	ROLLBACK STOP	Selects whether to stop with roll back (ON) or not (OFF) when the tape stops in the assemble recording mode.	"on"(ON)
"Ed cHASE"	EDIT CHASE	In an editing system consisting of a player, recorder, and RM-D7300 Digital Audio Editor, selects the equipment to be connected to the unit: • to another PCM-7050/7030 (OFF) • to other equipment fitted with a 9-pin remote connector. (ON)	"oFF"(OFF)
"iS dFLt"	MEMORY START DEFAULT	Selects whether to activate the memory start when power-on (ON) or not (OFF).	"oFF"(OFF)
"iS dLY-t"	MEMORY START DELAY TIME	Selects the delay time to output the sound after pressing the PLAY key for the memory start playback.	"0"(Without delay)
"LocAL"	LOCAL ENABLE	Selects whether the unit accepts control from the keys on the front panel, and parallel remote control signals via the 37-pin or 8-pin connector in remote mode.	"diSAbLE" (DISABLE)
"inPut-S"	INPUT SWITCH	Selects whether to accept the command from the INPUT MONITOR key (ENABLE) or not (DISABLE) when the tape is played back in the local mode. This setting will prevent misoperations during on-air.	"EnAbLE" (ENABLE)

When using the expanded menu for the system control

Setup menu		Functions	Factory-set position
The display that appears	Meaning of the display		
"PAnEL-S"	PANEL SWITCH	Selects whether to accept the command from the tape transport control keys on the front panel (ENABLE) or not (DISABLE) when playback in the local mode. This setting will prevent misoperations while controlling the fader controller.	"EnAbLE" (ENABLE)
"AFtr cuE"	AFTER CUE	Selects whether to shift the mode to STOP mode (STOP) or PLAY mode (PLAY) after exiting the cue mode by pressing the CUE key during cue mode.	"StoP" (STOP)
"rEc dFLt"	REC MODE DEFAULT	Record mode is factory-set to "SAFE" in which no record mode is selected at power-on. You can set the record mode selected at power-on to any of master safe mode (SAFE), assemble mode (ASS), audio insert mode (Audio) or subinsert (Sub).	"SAFE"
"[SEt dSP]"	SETUP MENU for DISPLAY	Selects whether to open the display menu in the setup menu (OPEN) or not (CLOSE).	"cLoSE" (CLOSE)
"FL diSP"	FL DISPLAY	Adjusts the brightness of the display on the front panel.	"d-1" (DUTY-1) (maximum)
"P-HoLd"	PEAK HOLD	Selects the peak hold mode of the level meters.	"Auto" (AUTO)
"o-HoLd"	OVER HOLD	Selects the hold mode of the "OVER" segments of the level meters.	"on"(ON) (the indication of the "OVER" segments follows the peak hold mode)
"HoLd-t"	HOLD TIME	Selects the peak level hold time of the level meters.	"1_5" (1.5 seconds)
"rLS-t"	RELEASE TIME	Selects the release time for the level meters.	"50" (50 milliseconds)
"o-SEnS"	OVER LEVEL SENSITIVITY	Selects the level detection sensitivity that lights the "OVER" segments of the level meters.	"4" (4-word)
"[SEt SP]"	SET UP MENU for SIGNAL PROCESSING	Selects whether to open the signal processing menu of the setup menu.	"cLoSE" (CLOSE)
"Pb cond"	PB CONDITION	Selects the condition that causes the PB CONDITION indicator on the front panel to light.	"bad cond" (BAD CONDITION)
"E-Hold"	ERROR HOLD	Selects the hold mode of the MUTE and PB CONDITION indicators	"oFF" (OFF)
E-trSHLd	ERROR THRESHOLD	Selects whether to carry out muting when error rate increases.	"nor" (NORMAL)

Left margin labels: "When using the expanded menu for the display" and "When using the expanded menu for the signal processing"

Setup menu		Functions	Factory-set position
The display that appears	Meaning of the display		
"[SEt Ed]"	SET UP MENU for EDITOR	Selects whether to open the editor menu in the setup menu.	"cLoSE" (CLOSE)
When using the expanded menu for editor — "JoG Loop"	JOG LOOPING	Selects whether to carry out audio looping at memory jog	"diSAbLE" (DISABLE)
"StArt"	MEMORY START	Selects whether to use the sound memory for memory start or to find the precise start point by memory jog.	"StArT" (START)
"JoG ctL"	JOG CONTROL	Selects whether the memory jog operation is controlled by the BVE-910/9100, RM-D7300 or DAE-3000.	"oFF" (OFF)
"1St Edit"	FIRST EDIT	Selects whether a BVE video editor performs the first edit.	"oFF" (OFF)
"tc rtn"	TIME CODE RETURN	Selects whether to send back TIME CODE MISSING upon receiving the CURRENT TIME SENSE command.	"oFF" (OFF)

When using the expanded menu, you will select many menus, usually sequentially. But you can go back quickly to the first menu if that saves time. You can also reset all the settings to the default (factory-set) values together.
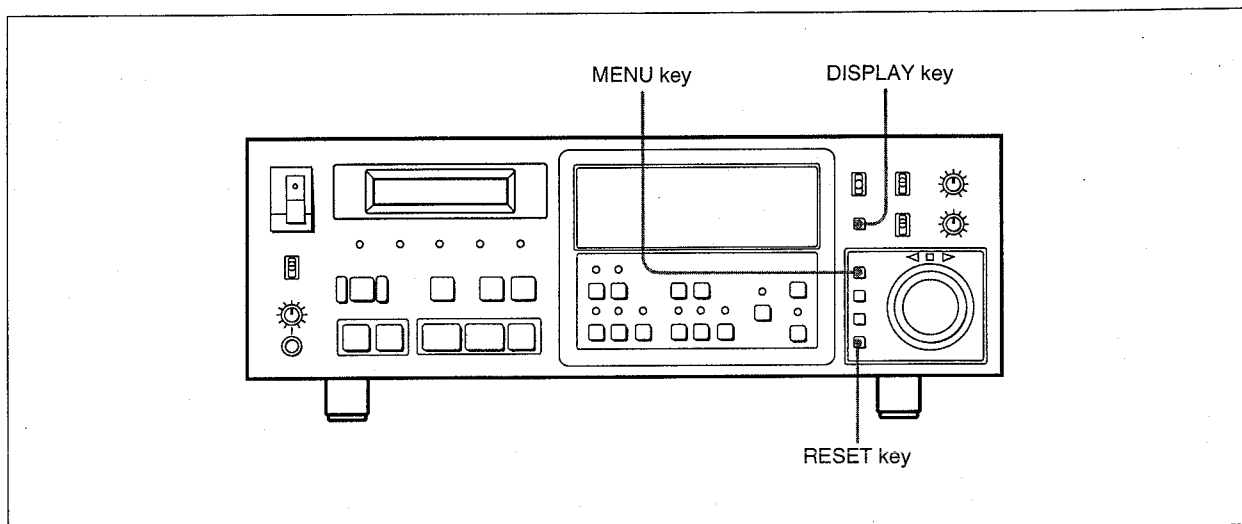
Front panel

Setting the display back to the default condition

Press the DISPLAY key while holding the MENU key down.
Doing this operation sets the display back to the tape time in the tape time display area and "LOCATE POINT" time code data in the input/set data display area. At the same time, doing this operation sets the dial menu back to the "in Pt" menu though its menu display does not appear on the display.

Setting back to the factory-set status

Set the display back to the factory-set (default) status if you cannot tells which menu you are operating in. If necessary, start the setting from the beginning.

1 Display an item of the setup menu.

2 Press the RESET key while holding down the MENU key.
The tape direction lamps flash. The flashing lamps indicate the display is set back to the default status.

5-2-1. About the DISPLAY Key Menu

The following twelve items (menus) can be displayed in the input/set data display area on the display. This function is called DISPLAY key menu.

There are the following two methods of changing the display.

• Pressing the DISPLAY menu key on the front panel
• Turning the search dial while holding down the DISPLAY menu key.

Select either of the above.
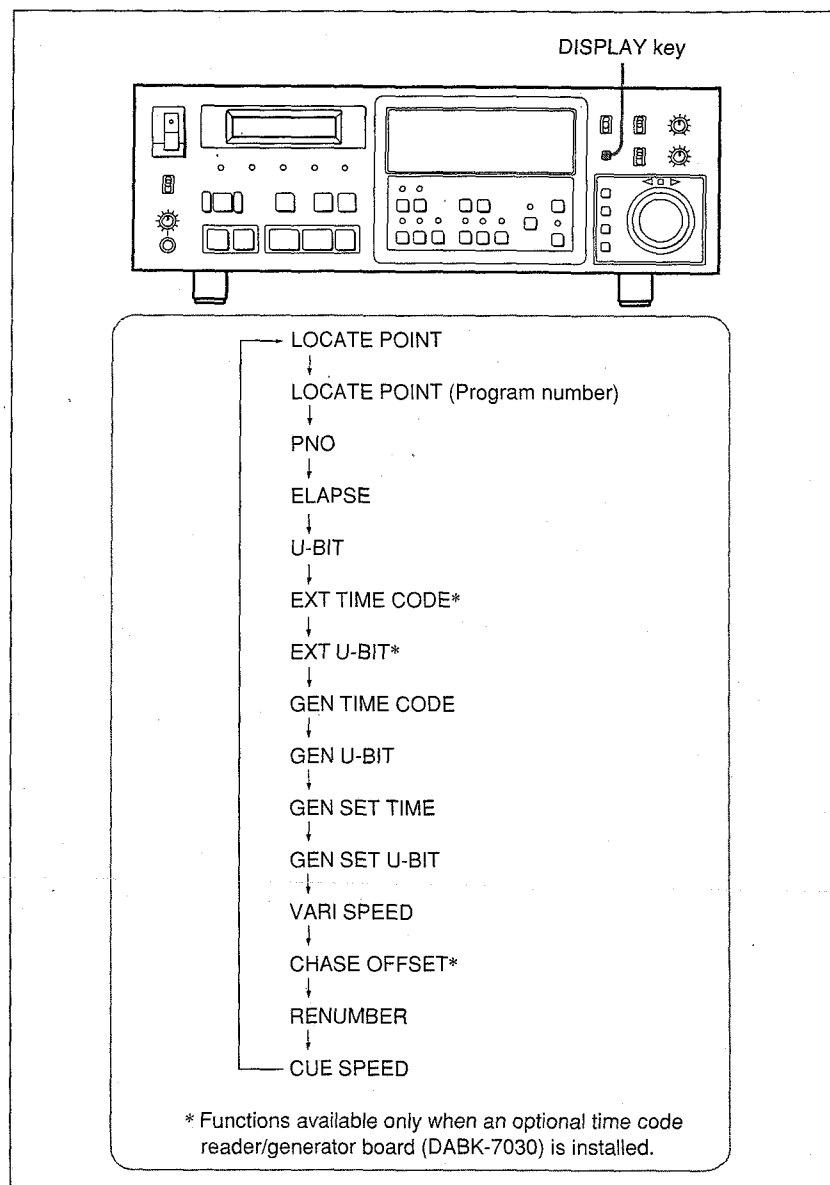
DISPLAY key

```
        LOCATE POINT
          ↓
        LOCATE POINT (Program number)
          ↓
        PNO
          ↓
        ELAPSE
          ↓
        U-BIT
          ↓
        EXT TIME CODE*
          ↓
        EXT U-BIT*
          ↓
        GEN TIME CODE
          ↓
        GEN U-BIT
          ↓
        GEN SET TIME
          ↓
        GEN SET U-BIT
          ↓
        VARI SPEED
          ↓
        CHASE OFFSET*
          ↓
        RENUMBER
          ↓
        CUE SPEED
```

* Functions available only when an optional time code reader/generator board (DABK-7030) is installed.

Display key menu

Displays the tape running time (elapsed tape time).

Displaying the elapsed time

DISPLAY key

Displaying the elpsed time

Press the DISPLAY key to set the display to "ELAPSE".
The elapsed tape time appears in the display.

Setting the display back to "0" — How to reset
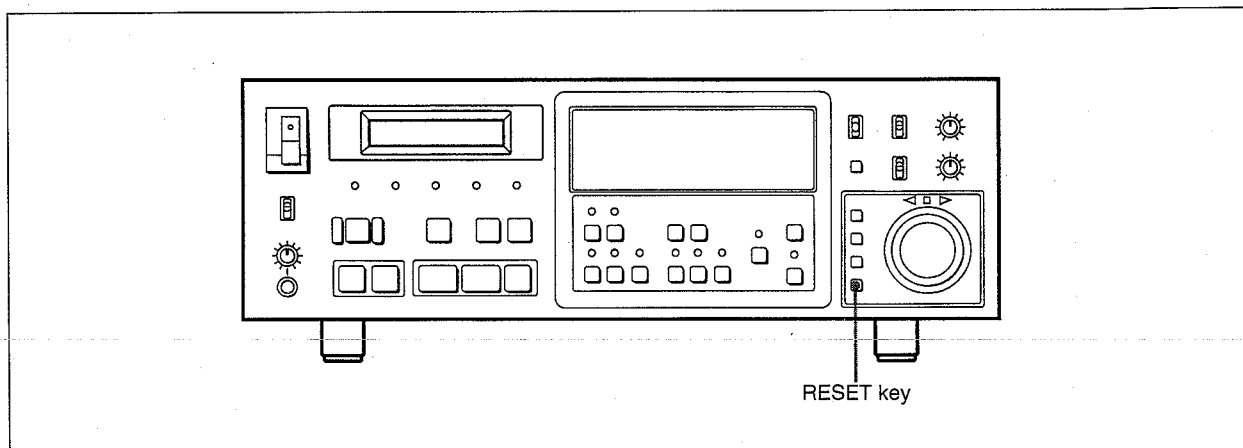
RESET key

Resetting the display

Press the RESET key.
The display is reset to "00H00M00S00F".

5-2-3. Displaying the User Bit on the Playback Tape — U-BIT

Displays the user bit of the time code on the playback tape.

Displaying the user bit
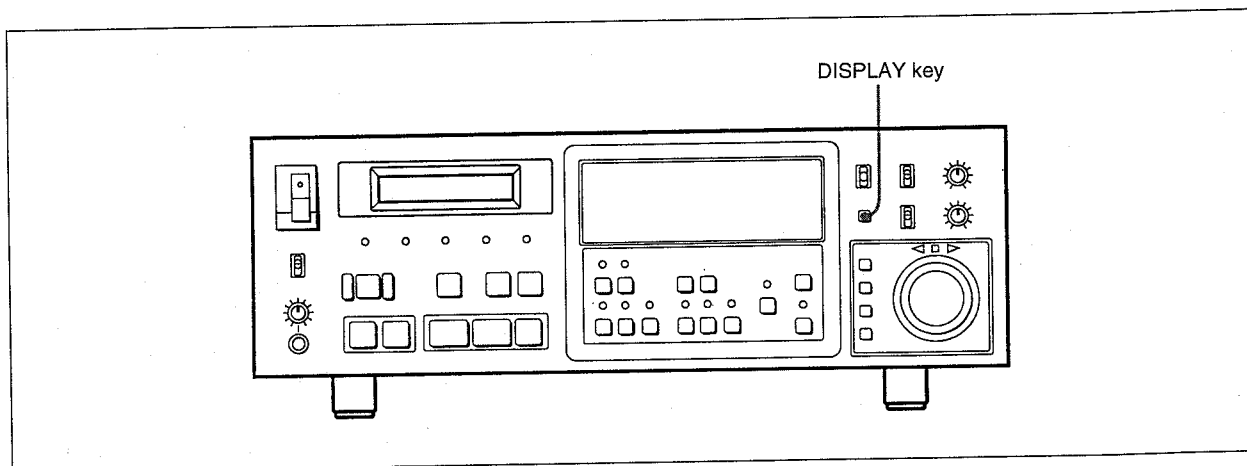
Displaying the user bit

1 Set "ub-diSP" (USER BIT DISPLAY) to ON from the setup menu of the dial menu.

See the section on "ub-diSP (USER BIT DISPLAY)" (page 5-56) in Section 5-3-3 "Setup Menu" for more details.

2 Press the DISPLAY key and set the display to "U-BIT".
The user bit on the tape appears when the tape is played back.

5-2-4. Displaying the Input Time Code (when a DABK-7030 is installed) — EXT TIME CODE

Displays the external time code input to the unit.

Displaying the time code input to the unit
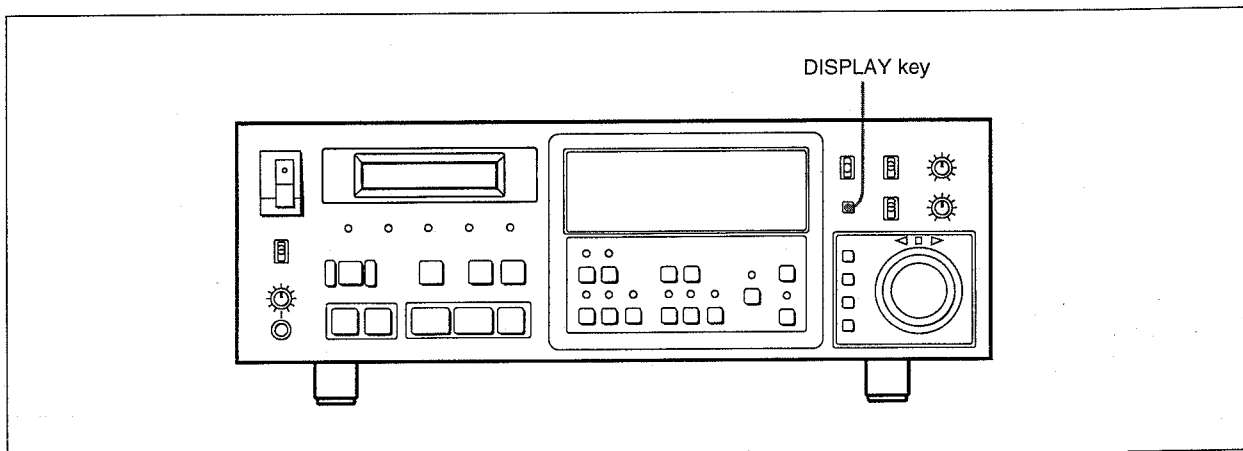
DISPLAY key

Displaying the time code input to the unit

Press the DISPLAY key and set the display to "EXT TIME CODE". The external time code appears.

5-2-5. Displaying the User Bit of the External Time Code Input to the Unit (when a DABK- 7030 is installed) — EXT U-BIT

Displays the user bit of the external time code.

Displaying the user bit of the time code input to the unit
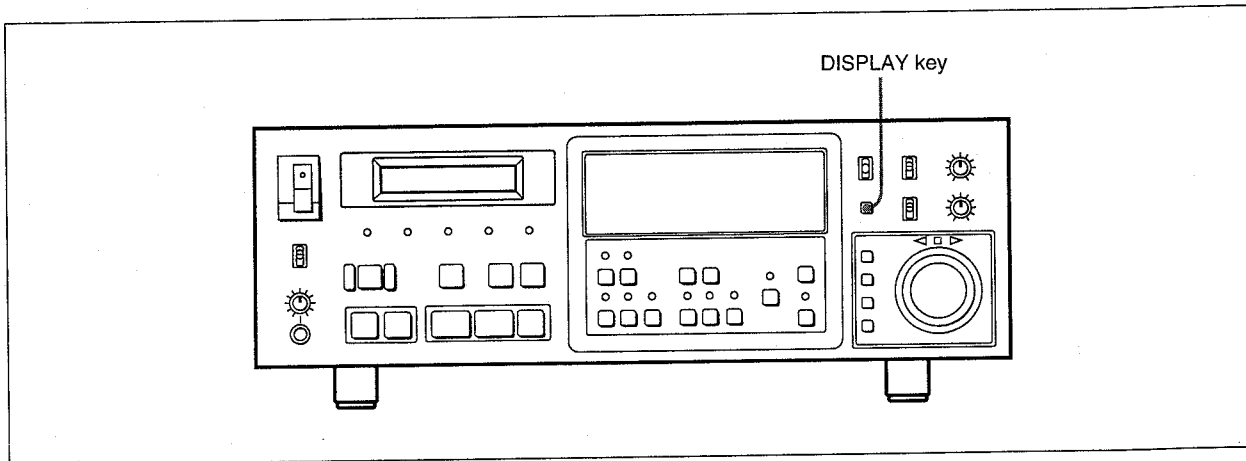
DISPLAY key

Displaying the user bit of the time code input to the unit

1 Set "ub-diSP" (USER BIT DISPLAY) to ON from the setup menu of the dial menu.

See the section on "ub-diSP (USER BIT DISPLAY)" (page 5-56) in Section 5-3-3 "Setup Menu" for more details.

2 Press the DISPLAY key and set the display to "EXT U-BIT". The user bit of the external time code appears.

5-2-6. Displaying the Internal Generator Time Code — GEN TIME CODE

Displays the time code generated by the internal time code generator.

Displaying the internal generator time code
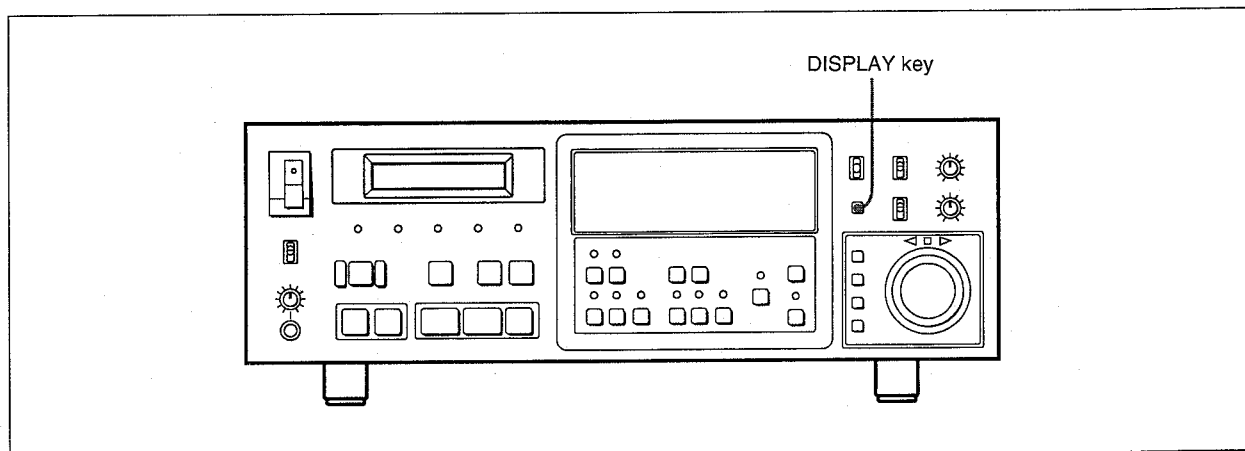
DISPLAY key

Displaying the internal generator time code

Press the DISPLAY key and set the display to "GEN TIME CODE".
The internal generator time code appears.

Displays the user bit of the time code generated by the internal time code generator.

Displaying the user bit of the internal generator time code
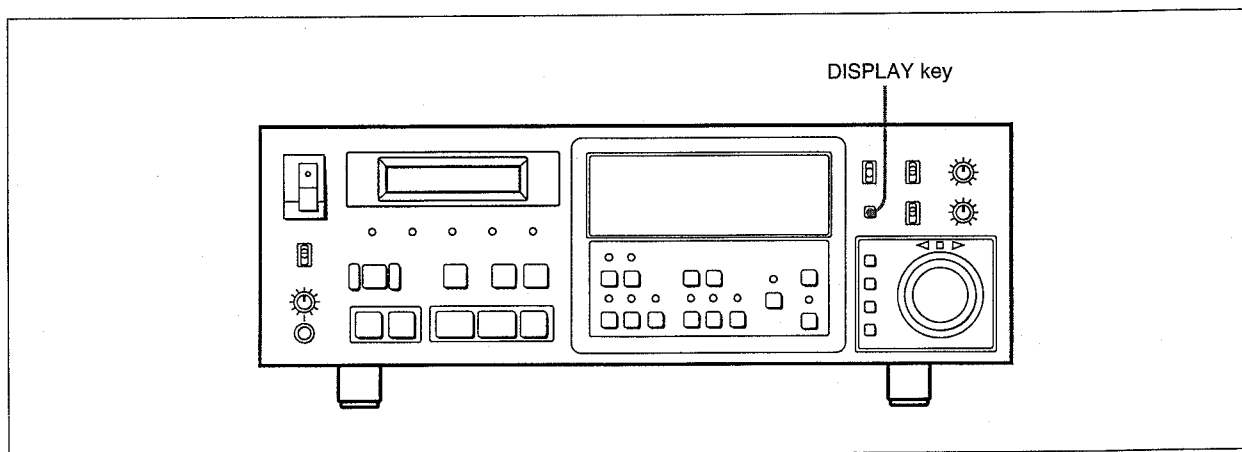
Displaying the user bit of the internal generator time code

1 Set "ub-diSP" (USER BIT DISPLAY) to ON from the setup menu of the dial menu.

See the section on "ub-diSP (USER BIT DISPLAY)" (page 5-56) in Section 5-3-3 "Setup Menu" for more details.

2 Press the DISPLAY key and set the display to "GEN U-BIT". The user bit of the internal generator time code appears.

5-3. Dial Menu Operations

The dial menu consistes of three menus: preset menu (setting the data), display menu (displaying the information) and setup menu (setting the setup).
The function and the operation of each menu is explained below.

5-3-1. Preset Menu

The preset menu, that is used for setting the data, consists of the following five items:

- "in Pt" (IN POINT)
- "out Pt" (OUT POINT)

For details of how to set and use these items, see section "Time code repeat playback" (on page 4-37) in section "4-2-3. Locating Specific Points on a Tape".

- "GAin rnG" (GAIN RANGE)
- "inP GAin" (INPUT GAIN)
- "croS FAdE" (CROSS FADE)

For details of how to set and use these three items, see sections "Setting input signal gain and upper limit of the input signal gain" (on page 4-11), "Setting the upper limit value of the input signal gain" (on page 4-13) and "Cross-fading time in sync recording mode" (on page 4-14) in section "4-1-5. Basic Recording Procedure"

Displaying the error code — "Error" (ERROR)

Displays the error code which outlines the errors detected so that you can tell how and what parts of the unit are affected.
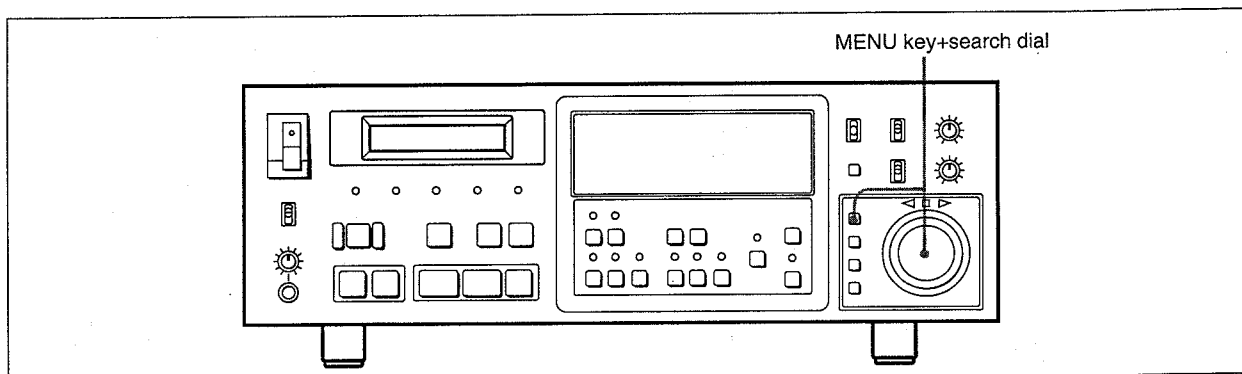
Displaying the error code

Turn the search dial while holding the MENU key down and set the display to "Error".
The unit displays the error code.
The meaning of the error code is as follows:
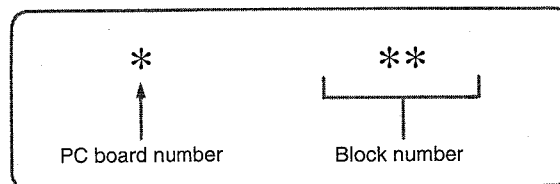
Error code form

**List of the printed circuit (PC) board numbers where an error has occurred**
Displays the parts where an error occurred by the number.
1: System control board (SY-155 board)
2: Servo board (SV-123 board)
3: Signal processing board (SP-13 board)
4: Digital I/O board (DIO-10 board)
5: Time code reader/generator board (TC-58 board)
6: Memory start board (MEM-40A/B board)
7: Edit memory board (MEM-40C board)
8: RS-232C interface board (IF-283 board)

About the block number
See Section 7-2-2 "Error Codes" (page 7-6) for details.

Displaying the warning code — "cAution" (CAUTION)

Displays a warning code which outlines the errors detected so that you can tell how and what parts of the unit are affected.

MENU key+search dial
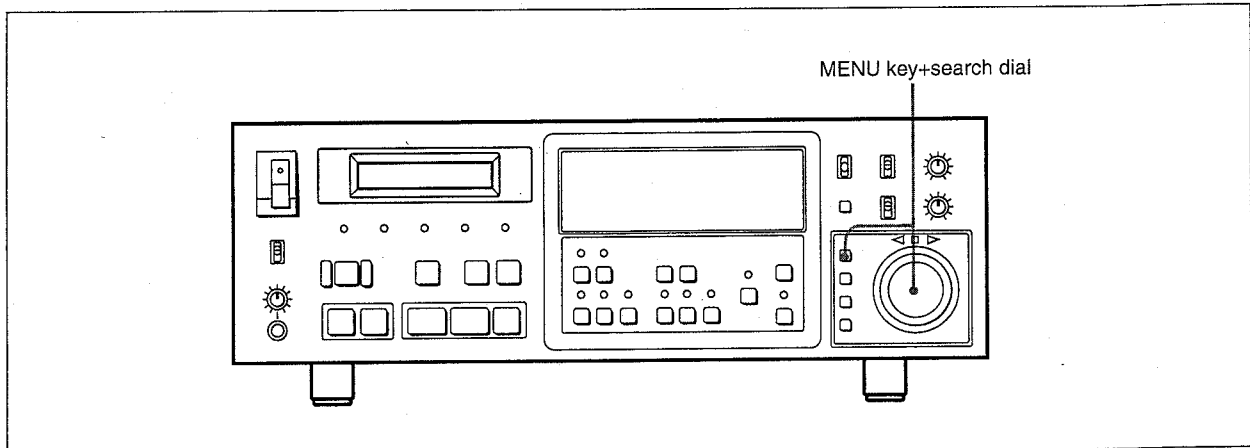
Displaying the warning code

Turn the search dial while holding the MENU key down and set the display to "cAution".
The unit displays the warning code.
The meaning of the warning code is the same as the error code (page 5-21).

Displaying the level meter indications numerically — "Au rEF" (AUDIO REFERENCE)

Displays the level meter indications numerically.
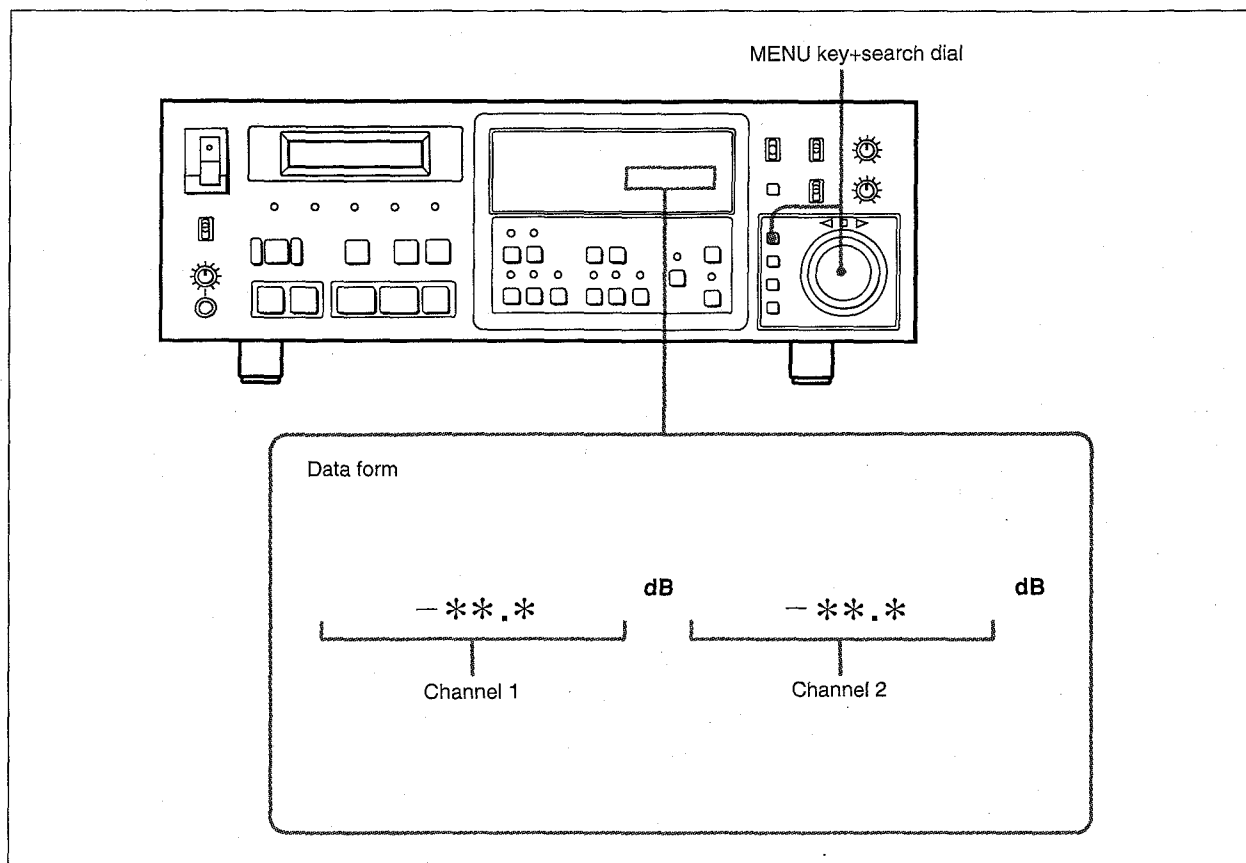
Displaying the level meter indications numerically

Turn the search dial while holding the MENU key down and set the display to "Au rEF".
The unit displays numerically the signal level on the level meters. If level is under –25.5 dB, the display shows "----".

Displaying the peak hold level of the level meter numerically — "Au rEF-P" (AUDIO REFERENCE PEAK HOLD)

Displays the peak hold level of the level meters numerically.
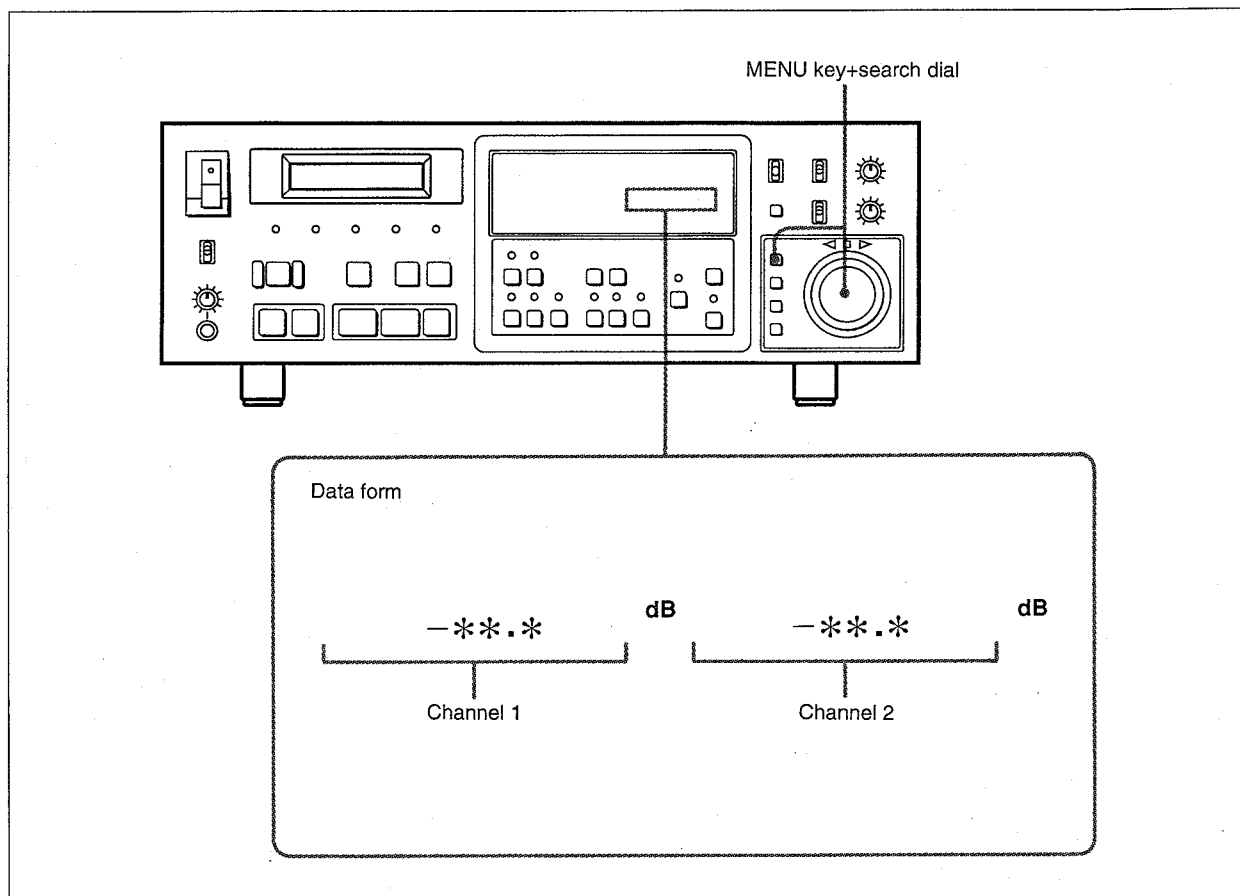
Numerically displaying the peak hold level of the level meters

Turn the search dial while holding the MENU key down and set the display to "Au rEF-P".
The unit displays the peak hold level of the level meters numerically.
If the level is under –25.5dB, the display shows "----".

Selecting the menu level of the display menu — "[dSP Grd]" (DISPLAY MENU GRADE)

Selects the menu level of the display menu from basic display and expanded display.
The setting is retained when you turn the power off.

Factory-set position: "bASic" (BASIC)
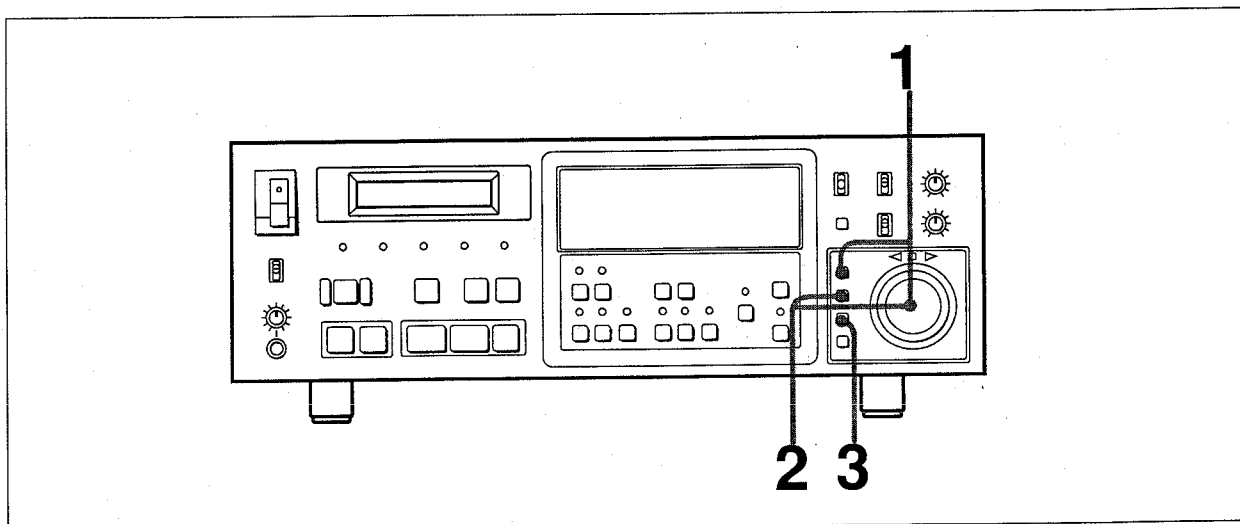
Selecting the menu level of the display menu

1 Turn the search dial while holding the MENU key down and set the display to "[dSP Grd]".

2 Turn the search dial while holding the DATA key down to select the menu level.
The displayed menu level flashes (according to the two choices below) and every time you turn the search dial, the flashing menu level changes. The changes are as follows:

"bASic" (BASIC): The unit enters the basic display menu mode.

"EnHAncEd" (ENHANCED): The unit enters the expanded display menu mode.

3 Press the SET key.
The flashing stops and the selection is entered.

Displaying the last error point — "LASt Err" (LAST ERROR)

Displays the time code of the last point where an error occurred and the erroneous data was interpolated or the audio output signals were muted.

**This function is available when:** the level of the display menu is "EnHAncEd" (ENHANCED).
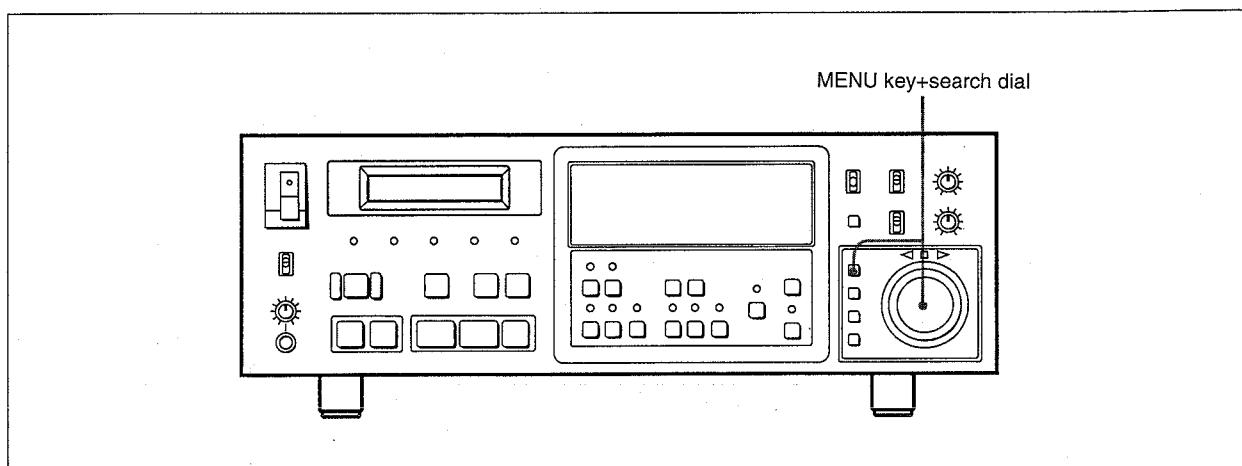
Displaying the last error point

Turn the search dial while holding the MENU key down and set the display to "LASt Err".
The unit displays the time code of the last interpolating or muting point.

Displaying the error correction code list — "Ecc" (ERROR CORRECTION CODE)

The unit memorizes up to 500 points where muting, interpolation or correction occurred during playback or recording in monitor recording mode. You can display the error contents and the time codes of those points.

This function is available when: the display menu level is "EnHAncEd" (ENHANCED).
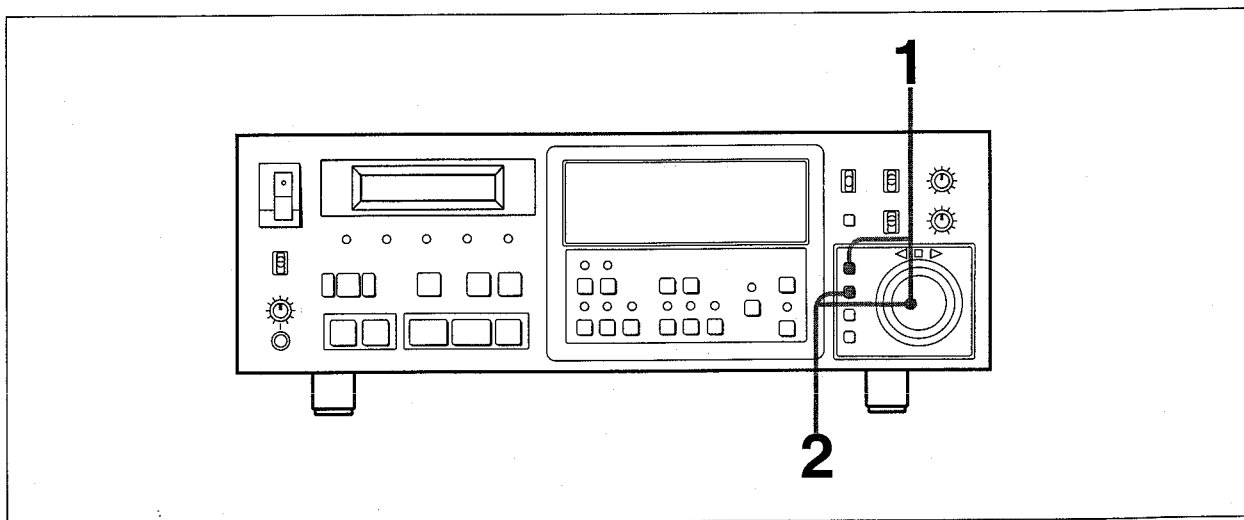
Displaying the error correction code list

1 Turn the search dial while holding down the MENU key and set the display to "Ecc ---".
--- : Serial No. of error point

2 Turn the search dial while holding down the DATA key.
The serial No. is increased or decreased depending on whether the search dial is turned clockwise or counterclockwise.
Every time you press the MENU key, the serial No. changes in order of 1 – 100 – 200 – 300 – 400 – 500 – 1.....
The type of error and time code for one serial No. appears on the display.
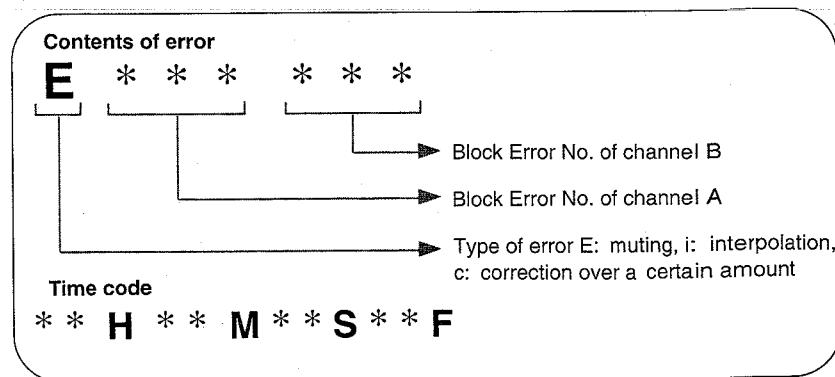
Error correction code display

When the number of error points exceeds 500
The error points are overwritten from point 1.

To listen to the sound around an error point
Press the LOCATE key.
The unit positions the tape to a point 5 seconds prior to the point of the displayed time code, then starts playback.

To clear the error list
The error list can be cleared in either of the following two ways.

Method 1

1 Turn the search dial while holding down the MENU key, and set the display to "Ecc".

2 Press the RESET key while holding down the DATA key.

Method 2
Remove the cassette by pressing the EJECT key. Note, however, that the error list is not cleared if you eject the cassette while the "Ecc" is displayed.

Note

Signal processing performed for every DAT frame (30 ms). This cycle does not correspond to the SMPTE, EBU or FILM time codes. There may, therefore, be cases where the displayed time codes are the same even though the displayed address is different.

Displaying the time code format of the tape — "tAPE tcF" (TAPE TIME CODE FORMAT)

Displays the time code format of the tape. Using this function, you can find the time code format on the recorded tape.

This function is available when: the level of the display menu is "EnHAncEd" (ENHANCED).

MENU key+search dial
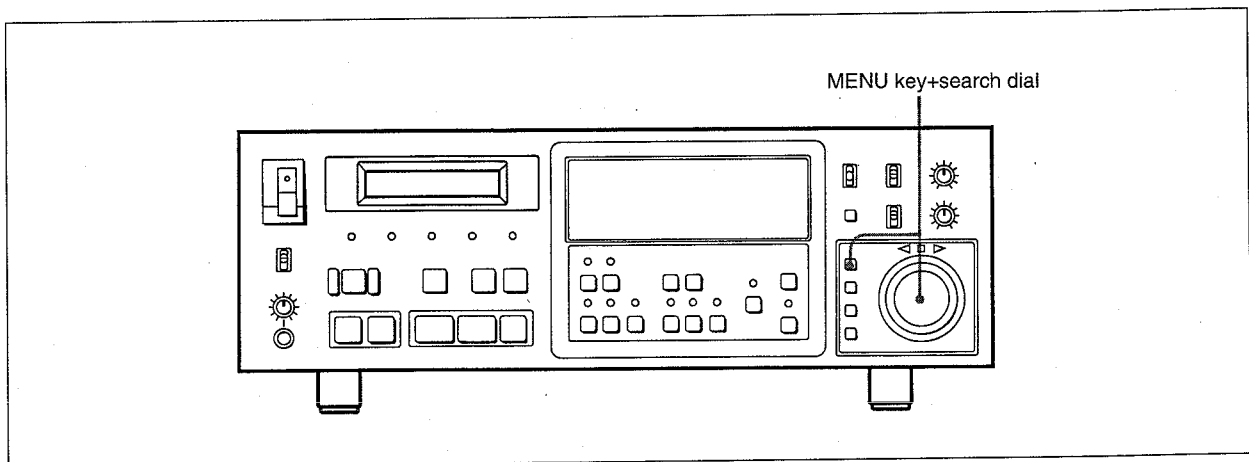
Displaying the time code format of the tape

Turn the search dial while holding the MENU key down and set the display to "tAPE tcF".
The unit displays the time code format on the recorded tape.

"t-30ndF": SMPTE (non-drop frame mode), 30 frames/sec.
"t-29ndF": SMPTE (non-drop frame mode), 29.97 frames/sec.
"t-29dF": SMPTE (drop frame mode), 29.97 frames/sec.
"t-Ebu": EBU, 25 frames/sec.
"t-FiL": Film, 24 frames/sec.

Displaying the presence of an optional board — "oPtion" (OPTION)

Indicates which optional boards are installed in the unit.

This function is available when: the level of the display menu is "EnHAncEd" (ENHANCED).
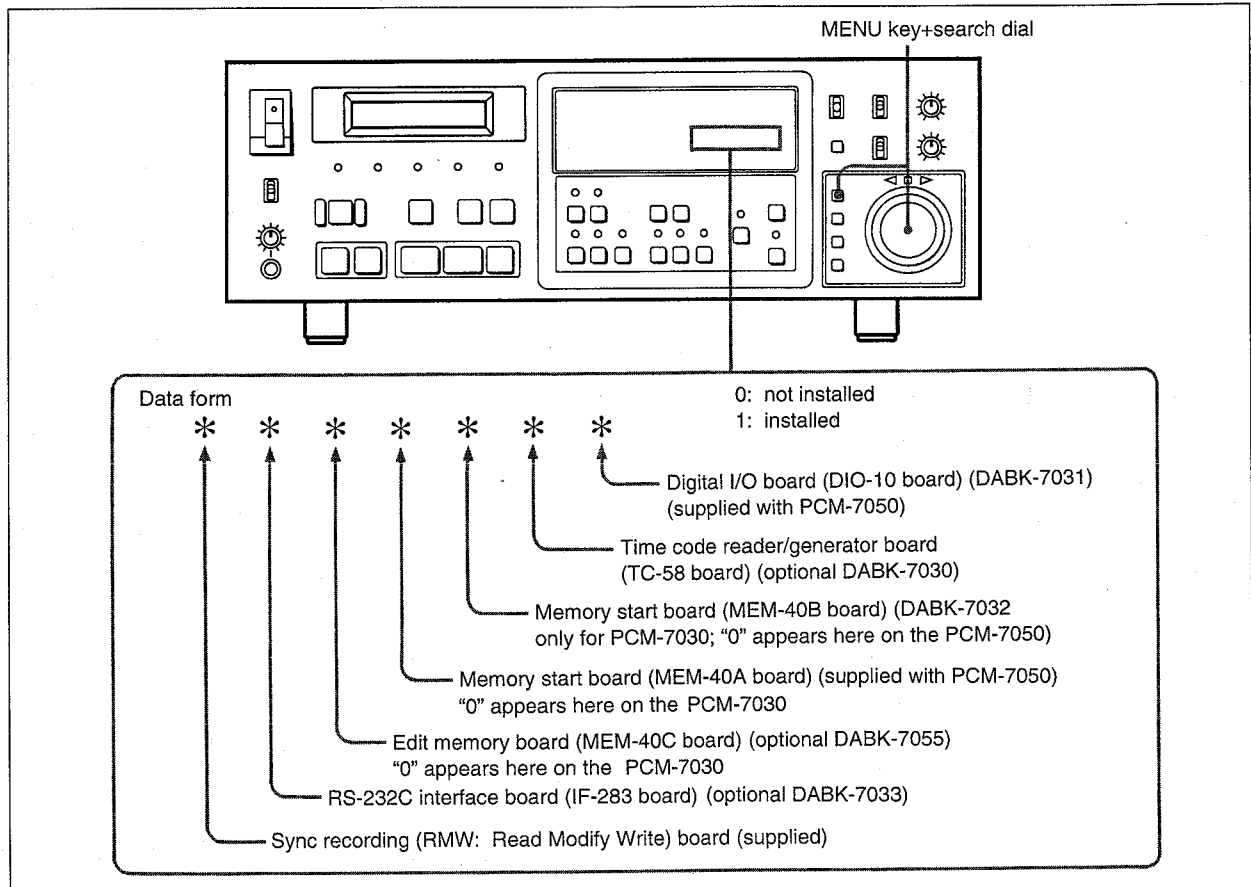

Displaying the presence of an optional board

Turn the search dial while holding the MENU key down and set the display to "oPtion".
The unit displays the presence of the installed board by the numbers "0" and "1".

Displaying the rotation time of the head drum — "Hour- t" (HOUR TIME)

Displays the accumulated rotation time of the head drum. Using this indication, decide when to change the head drum. To change the head drum, consult a qualified Sony service technician.

This function is available when: the level of the display menu is "EnHAncEd" (ENHANCED).
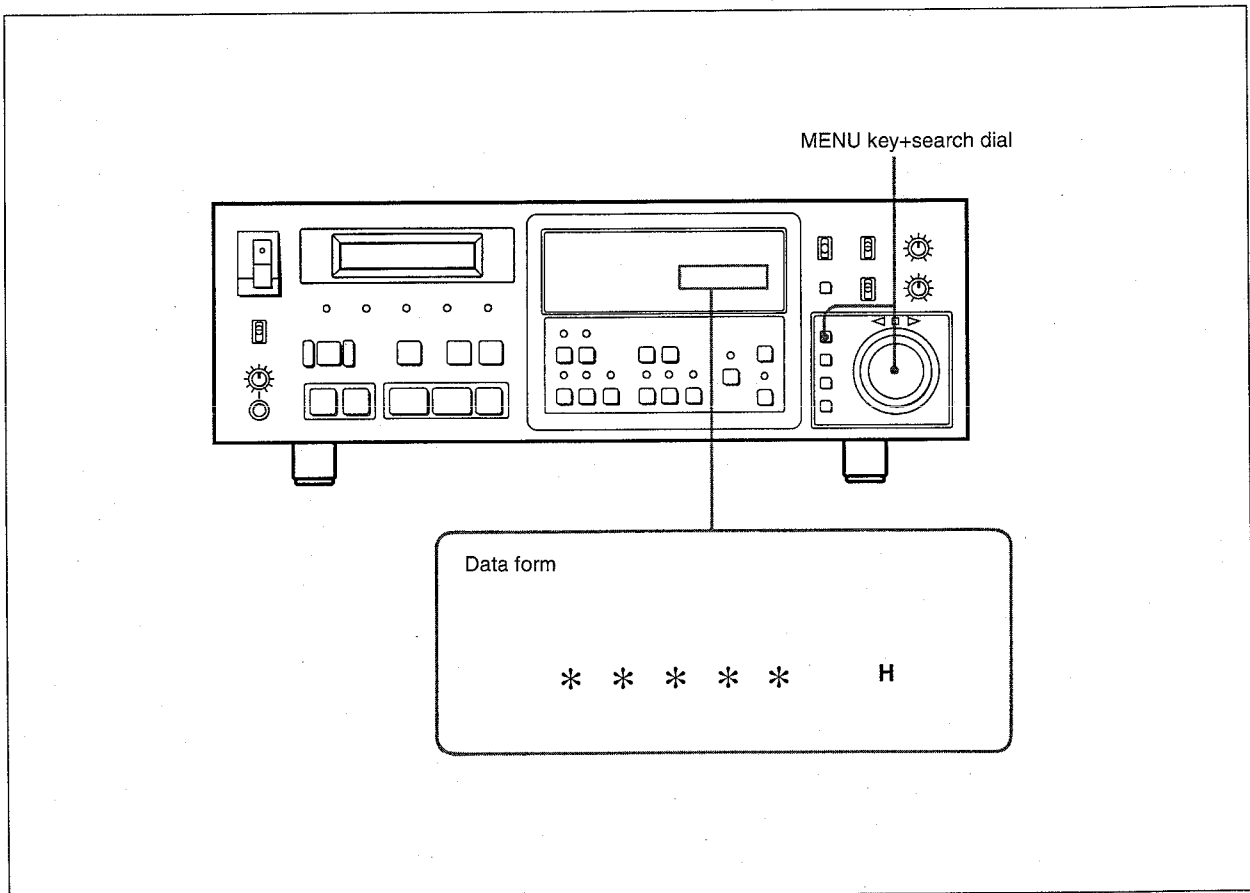
Displaying the rotation time of the head drum

Turn the search dial while holding the MENU key down and set the display to "Hour-t".
The unit displays the rotation time of the head drum.

Storing customized data for the setup menu — "-- Sto-- " (STORE)

Stores customised data you have chosen for each setup menu. The data is stored from address 1 to address 10.
Once storing the data, then you can select one of the 10 addresses to store your parameters and operate the unit using your own setup data. When storing the setup data, you have to set each parameter of the setup menu in advance.
The setup data in the address saved is retained when you turn the power off.
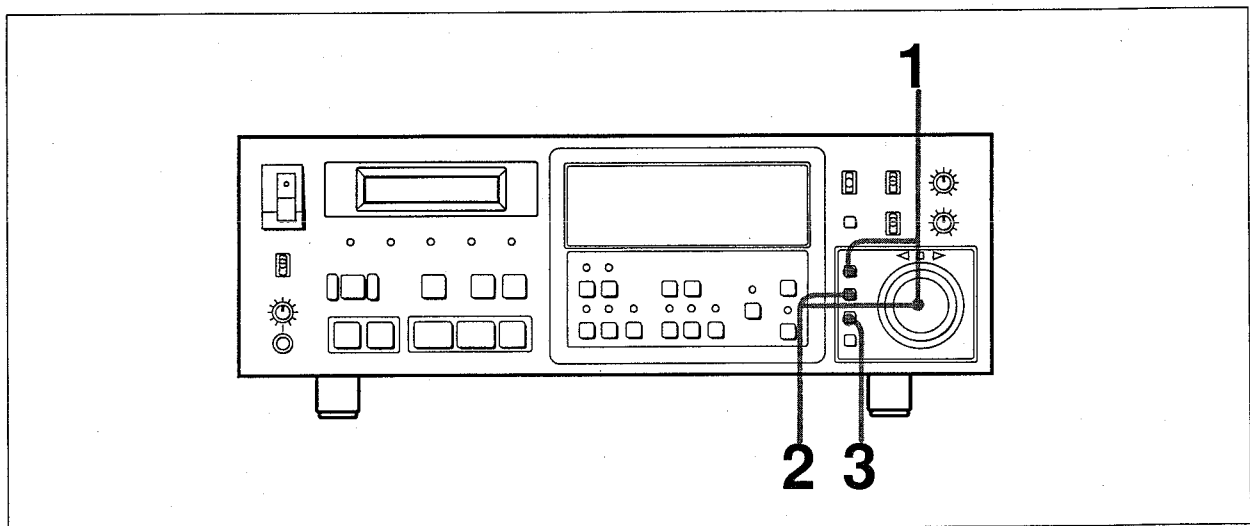
Storing the setup data for the setup menu

1 Turn the search dial while holding the MENU key down and set the display to "-- Sto--".
The unit enters the setup data storing mode.

2 Turn the search dial while holding the DATA key down to select storing address.
By turning the search dial, the flashing address number changes from 1 to 10.
To increase the address number: Turn the search dial clockwise.
To decrease the address number: Turn the search dial counterclockwise.

3 Press the SET key.
Flashing stops and the setup data of each setup menu are stored in the selected address.

Recalling the stored data of the "-- Sto--" menu — "-- rcL-- " (RECALL)

You can recall the stored data of the "--Sto--" menu using the address number from 1 to 10. Also, you can recall factory-set data instead of address 1 to 10. You can operate the unit by the recalled data.
The recalled address numbers are saved when you turn the power off. When you turn the power on again, the unit holds the current address number.
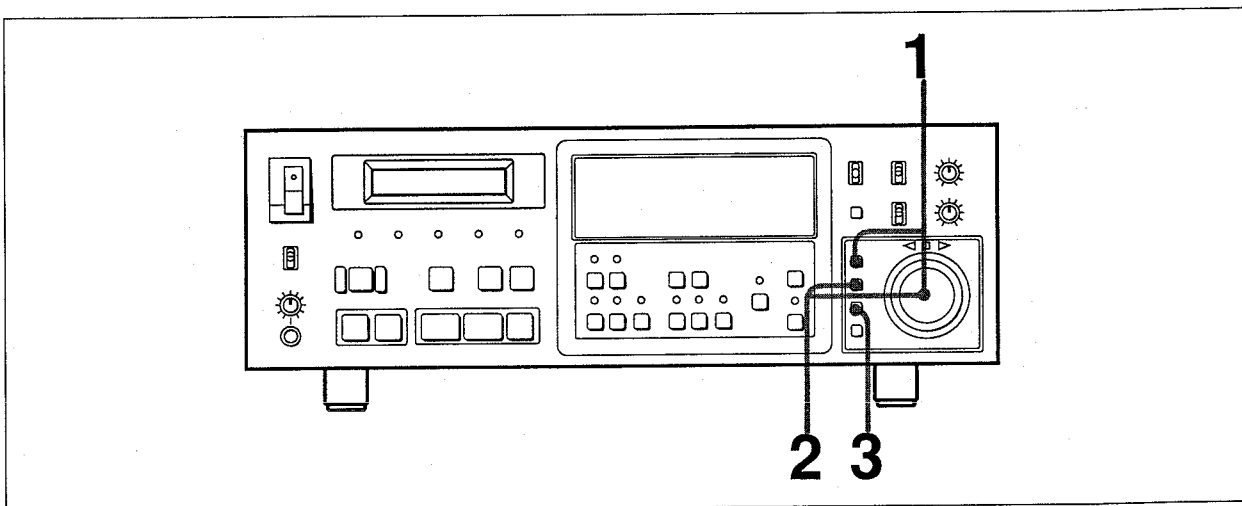
Recalling the stored data

1 Turn the search dial while holding the MENU key down and set the display to "-- rcL--".
The unit enters the stored setup data recalling mode.

2 Turn the search dial while holding the DATA key down to select recalling address.
By turning the search dial, the flashing address number changes from 1 to 10.
Between address number 10 and address number 1, "FActorY" (FACTORY) appears on the display. This setting allows you to operate the unit by the factory-set data.
>   **To increase the address number:** Turn the search dial clockwise.
>   **To decrease the address number:** Turn the search dial counterclockwise.

3 Press the SET key.
Flashing stops and the stored setting data are recalled.
You can operate the unit by the stored setup data.

Selecting whether to automatically call data setup from the setup menu at power-on — "SEt uP" (SET UP)

Selects one of the following three data set from the setup menu at power-on.
- Customized data set from the "--Sto--" (STORE) menu
- Data set when the power was last turned off.
- Factory set data

All settings are saved when you turn off the power.

Factory-set position: "LASt" (LAST)
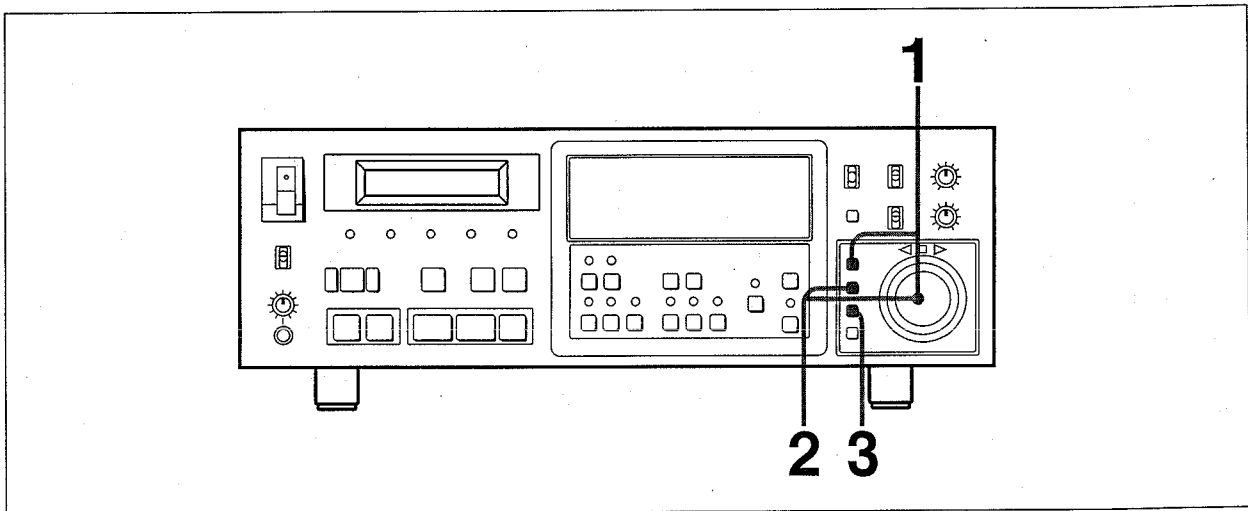
Setting data to be called at power-on

1 Turn the search dial while holding down the MENU key and set the display to "--SEt uP--".

2 Turn the search dial while holding the DATA key down to select the data to be called.
As you turn the search dial, the flashing data changes as follows.
"**LASt**" (LAST): Automatically calls the data set when the power was last turned off.
"**FActorY**" (FACTORY): Automatically calls the factory-set data.
"**Add-1**" : Automatically calls the customized data saved to address 1 with the "--Sto--" menu.
"**Add-10**": Automatically calls the customized data saved to address 10 saved with the "--Sto--" menu.

3 Press the SET key.
The display stops flashing and the selected data is stored.

When you turn the power on, the called data appears at the left side of the display.
Example: When "FActorY" is selected
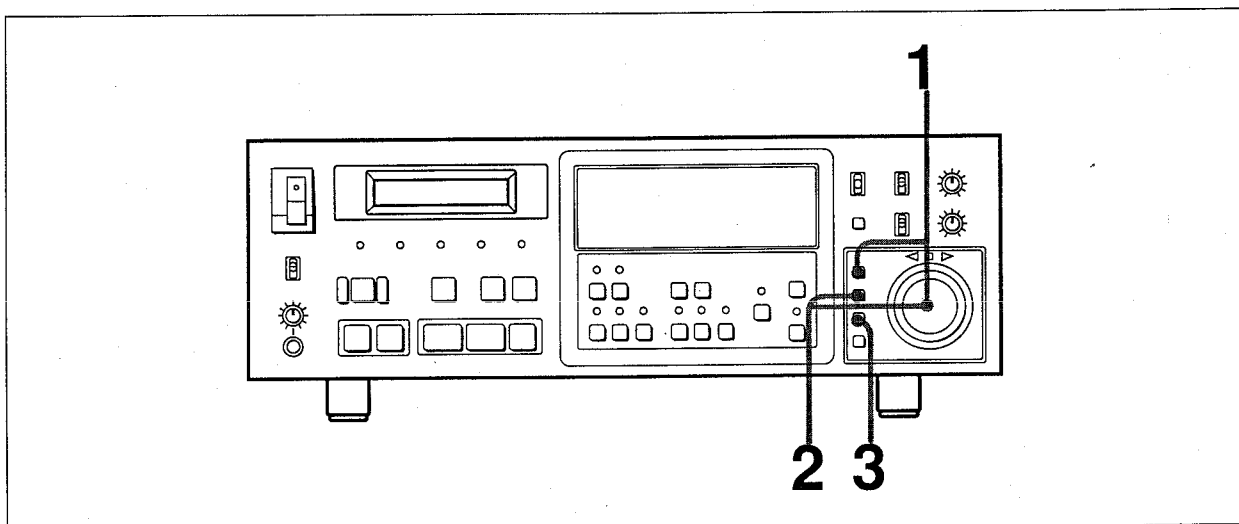--FctrY--

Selecting whether to record in monitor recording mode or in sync recording mode — "SYnc rEc" (SYNC REC)

Selects the recording mode.
- **Monitor recording mode (RAW: Read After Write):** The leading heads record and the trailing heads play.
- **Sync recording mode (RMW: Read Modify Write):** The leading heads play and trailing heads record.

The setting is saved when you turn the power off.

Factory-set position: "on" (ON)

Selecting whether to record in monitor recording mode or in sync recording mode

1 Turn the search dial while holding down the MENU key and set the display to "SYnc rEc".
The unit's recording mode can now be selected.

2 To select the recording mode, turn the search dial while holding the DATA key down.
By turning the search dial, the flashing indicator changes from "oFF" to "on".

"oFF" (OFF): Monitor recording mode (RAW: Read After Write). You can monitor the recorded sound while recording.

"on" (ON): Sync recording mode (RMW: Read Modify Write). You can perform punch-in/punch-out recording with cross-fading at the edit point.

3 Press the SET key.
The indicator flashing stops and recording mode setting terminates.

Note

When the recording mode is set to monitor recording mode, the unit displays "SYnc rEc - oFF -" (SYNC REC - OFF -) when either of the following conditions is met:
— Selecting assemble mode or insert audio mode
— Recording starts

Selecting the basis of the time code — "tc bASE" (TIME CODE BASE)

You can select and display the basis of the time code to be lit up in the tape time display area on the display or when searching for.
Sony uses "PRO R-TIME" as the DAT format for professional use. So, normally you will use PRO R-TIME. ("PRO R-TIME" is also referred to as "time code".) But if you play another format tape, you can change the basis of the time code. The PCM-7050/7030 can also play tape recorded in absolute time (ABS TIME) (which is used on the consumer DAT products). Note, however, that in this case the displayed time code is converted into SMPTE or EBU time code.
The setting is saved when you turn the power off.

Factory-set position: "Auto" (AUTO)
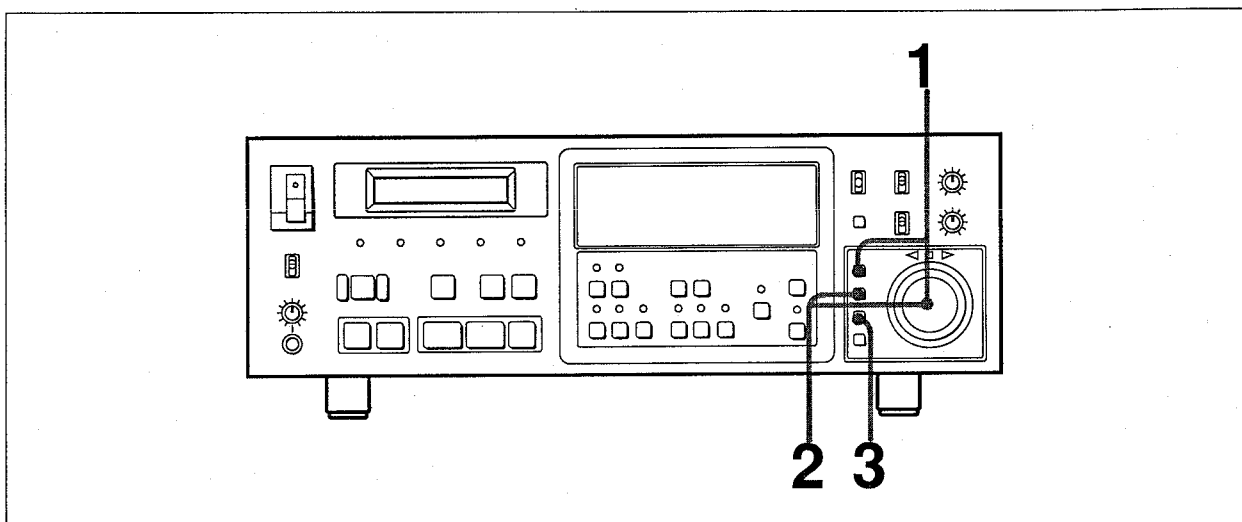
Selecting the basis of the time code

1 Turn the search dial while holding the MENU key down and set the display to "tc bASE".
The unit enters the mode for selecting the basis of the time code.

2 Turn the search dial while holding the DATA key down to select the basis of the time code.
By turning the search dial, the flashing basis of the time code changes as shown below.

"Auto" (AUTO): The PCM-7050/7030 automatically selects the recorded time code on the tape as the basis of the time code. In this case, indication on the display lights up as follows.

The tape recorded in PRO R-TIME: lights up the "TIME CODE" indicator on the display.

The tape recorded only in absolute time: lights up the "TIME CODE" and "ABS TIME" indicators on the display.

The tape recorded in neither PRO R-TIME nor absolute time: lights up the "COUNTER" indicator on the display.

"tc" (TIME CODE): The PCM-7050/7030 operates based on the PRO R- TIME and lights up the "TIME CODE" indicator on the display.

"AbS-tc" (ABSOLUTE TIME): The PCM-7050/7030 operates based on the ABS TIME and lights up both the "TIME CODE" and the "ABS TIME" indicators on the display.

"countEr" (COUNTER): The PCM-7050/7030 operates based on the COUNTER and lights up the "COUNTER" indicator on the display.

3 Press the SET key.

Flashing stops and the setting of the basis of the time code finishes. The basis of the time code is displayed on the display of the unit.

Note

When taking a cassette out in selecting "Auto", the unit displays the "tc" and operates based on the PRO R-TIME.

Selecting the time code format and the reference video signal frequency — "rEF tcF" (REFERENCE TIME CODE FORMAT)

You can select and display the time code format and the reference video sync signal frequency.
The setting is saved when you turn the power off.

Factory-set position: SMPTE (drop frame mode), 29.97 Hz (for the model for USA and Canada) or EBU, 25 Hz (for the model for European countries)
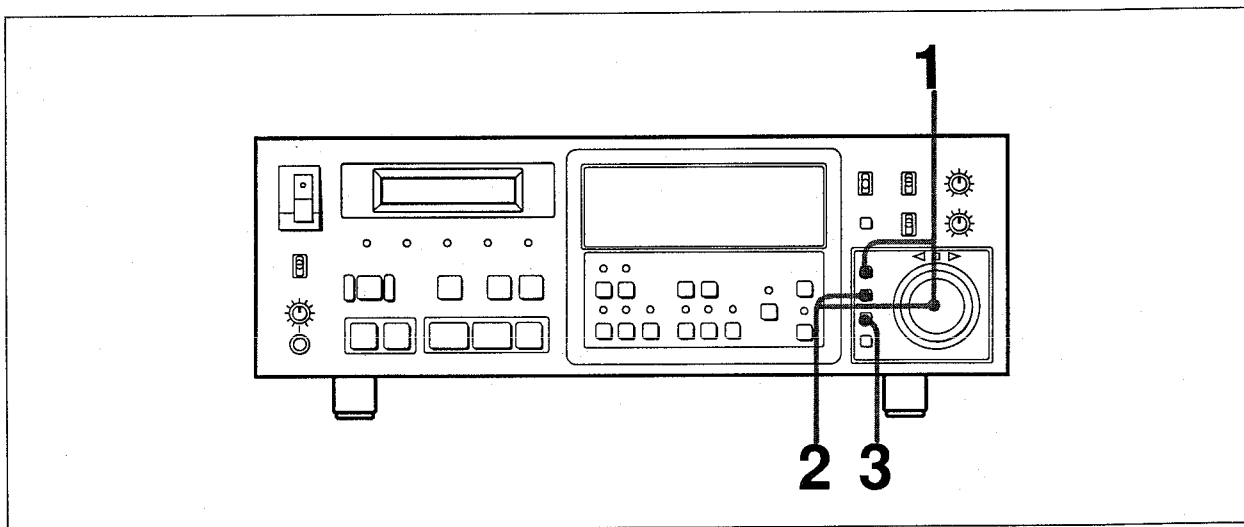
Selecting the time code format and the reference video frequency

1 Turn the search dial while holding the MENU key down and set the display to "rEF tcF".
The unit enters the mode for selecting the time code format and the reference video signal frequency.

2 Turn the search dial while holding the DATA key down to select the time code format and the reference video signal frequency.
By turning the search dial, flashing time code format and reference video signal frequency changes as shown below.

"30 ndF":
    Time code: SMPTE (non-drop frame mode), 30 frames/sec.
    Video sync signal: NTSC 30 Hz
    Display indication: Both "SMPTE" and "NDF", and "30" in video sync mode

"2997 ndF":
    Time code: SMPTE (non-drop frame mode), 29.97 frames/sec.
    Video sync signal: NTSC 29.97 Hz
    Display indication: Both "SMPTE" and "NDF", and "29.97" in video sync mode

"2997 dF":
Time code: SMPTE (drop frame mode), 29.97 frames/sec.
Video sync signal: NTSC 29.97 Hz
Display indication: Both "SMPTE" and "DF", and
"29.97" in video sync mode

"25 Ebu":
Time code: EBU, 25 frames/sec.
Video sync signal: PAL/SECAM 25 Hz
Display indication: "EBU", and "25" in video sync mode

"50r FiL":
Time code: Film, 24 fr ames/sec.
Video sync signal: 50 Hz rectangular wave
Display indication: No indication

"60r FiL":
Time code: Film, 24 frames/sec.
Video sync signal: 60 Hz rectangular wave
Display indication: No indication

"30 FiL":
Time code: Film, 24 frames/sec.
Video sync signal: NTSC 30 Hz
Display indication: "30" in video sync mode

"2997 FiL":
Time code: Film, 24 frames/sec.
Video sync signal: NTSC 29.97 Hz
Display indication: "29.97" in video sync mode

"25 FiL":
Time code: Film, 24 frames/sec.
Video sync signal: PAL/SECAM 25 Hz
Display indication: "25" in video sync mode

"60r ndF":
Time code: SMPTE (non drop frame mode), 30 frames/sec.
Video sync signal: 60 Hz rectangular wave
Display indication: "SMPTE" and "NDF"

"50r Ebu":
Time code: EBU, 25 frames/sec.
Video sync signal: 50Hz rectangular wave
Display indication: "EBU"

3 Press the SET key.
The flashing stops and the selection of the time code format and
the reference video frequency finishes. The unit displays the
selected time code format and the reference video frequency on the
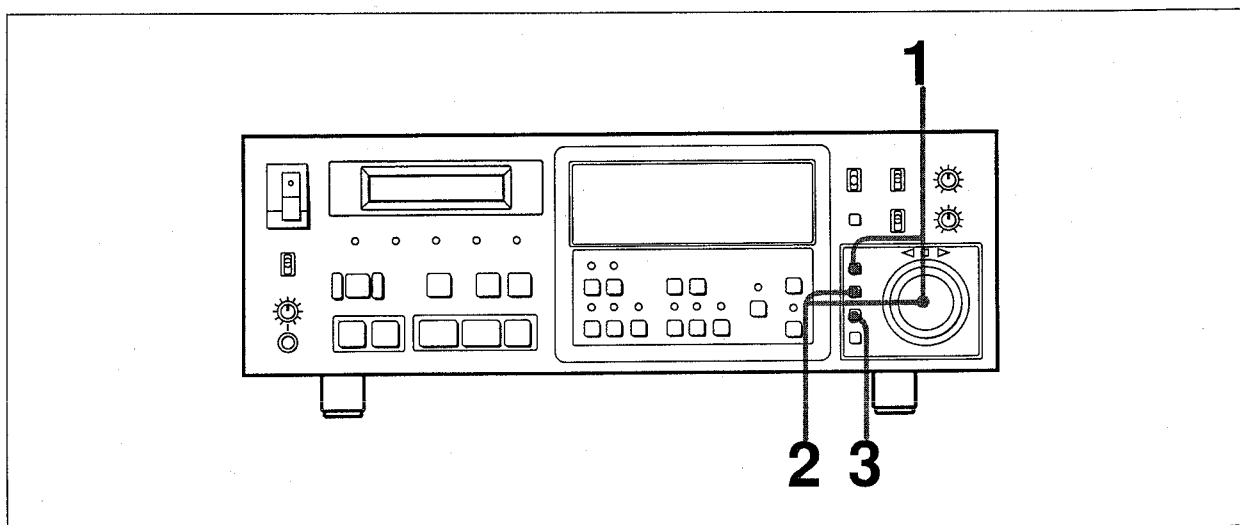display panel.

Note

The PCM-7050/7030 can change from one time code format to another. If you change the SMPTE, 29.97 Hz time code format to another, because of the difference between real time and SMPTE time code of this unit, it is possible that this unit will display skipping time code or a time code over 24H00M00S00F when crossing at 12 o'clock midnight (0 o'clock). But, the unit is not out of order. For the same format recording/playing, the time code continues when crossing at 12 o'clock midnight (0 o'clock).

Selecting recording time code (when a DABK-7030 is installed) — "rEc tc" (REC TIME CODE)

Selects the time code: an external time code input to the unit or an internally generated time code.
The setting is saved when you turn the power off.

Factory-set position: "rEAr SEL" (REAR SELECTOR)

Selecting recording time code

1 Turn the search dial while holding down the MENU key and set the display to "rEc tc".
The unit enters recording time code selection mode.

2 To select the recording time code, turn the search dial while holding the DATA key down.
By turning the search dial, the indicator changes as follows:
   "rEAr SEL" (REAR SELECTOR): The unit records the time code according to the setting of the recording time code selector on the rear panel.
   "int" (INTERNAL): The unit records the internally generated time code.
   "inPut" (INPUT) [the external time code]: The unit records the external time code input to the TIME CODE INPUT connector on the rear panel. "EXT" appears.

3 Press the SET key.
The indicator flashing stops and recording time code selection terminates.

Selecting the emphasis mode — "PrE EP" (PRE-EMPHASIS)

Turns emphasis ON or OFF for analog audio input.
The setting is saved when you turn the power off.

**Factory-set position:** "oFF" (OFF)
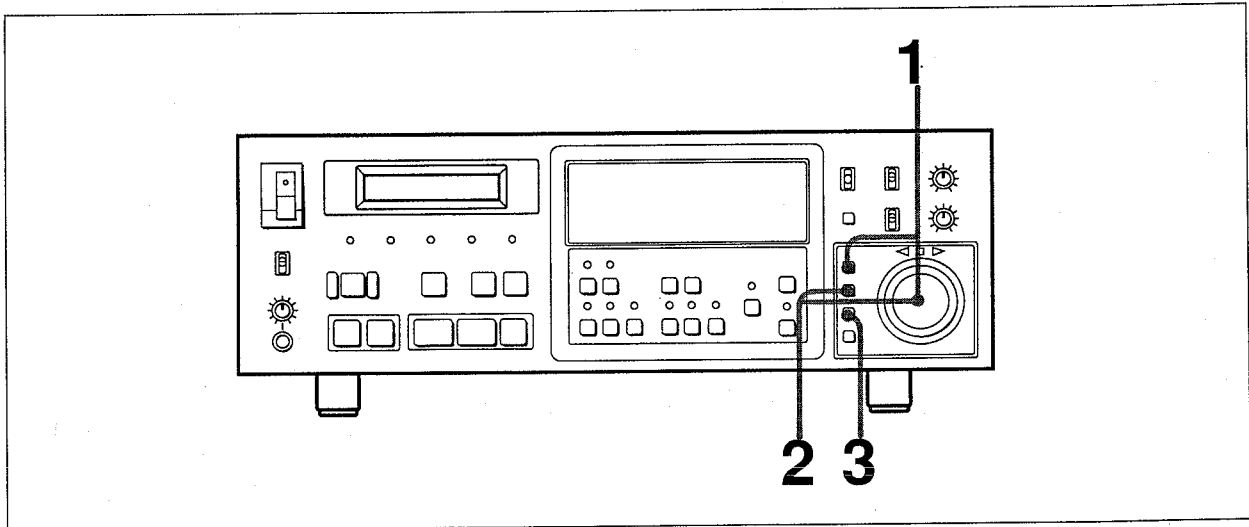
Selecting the emphasis mode

1 Turn the search dial while holding the MENU key down and set the display to "PrE EP".
The unit enters emphasis selection mode.

2 Turn the search dial while holding the DATA key down to select the emphasis mode.
By turning the search dial, the indicator flashing changes from "on" to "oFF".
> **"oFF"(OFF):** emphasis OFF (We recommend this position.)
> **"on"(ON):** emphasis ON

3 Press the SET key.
Flashing stops and the selection of the emphasis mode finishes.

Selecting the lock frequency range in external synchronization mode — "SYnc nrr" (SYNC NARROW)

Selects the lock frequency range in external synchronization mode (the setting of SYNC switch is either EXT or VIDEO position).
The setting is saved when you turn the power off.

Factory-set position: "on" (ON)
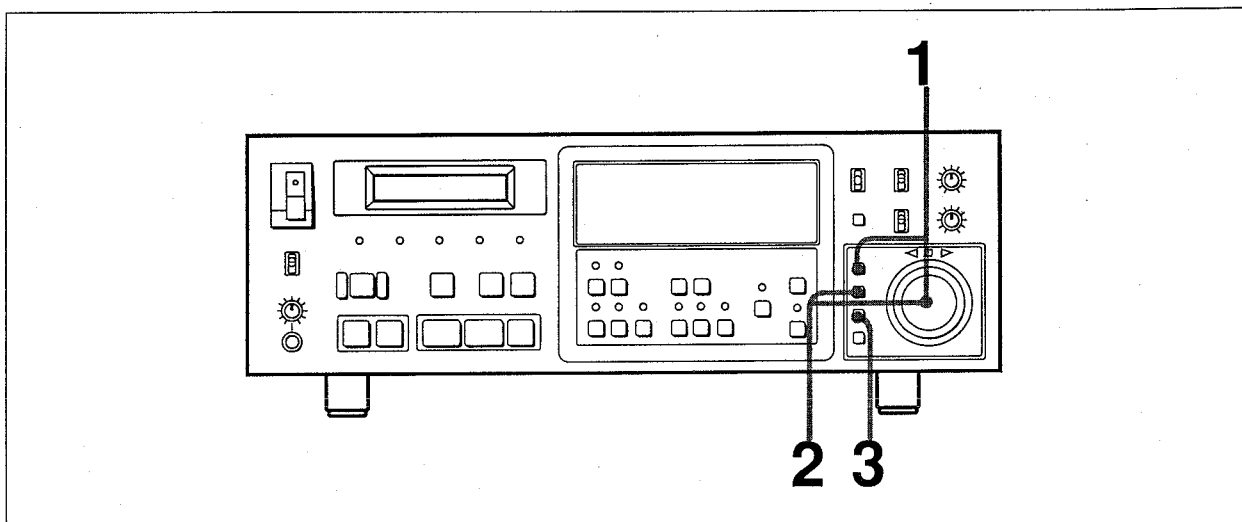

Selecting the lock frequency range

1 Turn the search dial while holding the MENU key down and set the display to "SYnc nrr".
The unit enters the selecting mode of the lock frequency range.

2 Turn the search dial while holding the DATA key down to select the lock frequency range.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

"oFF"(OFF): wide lock frequency range → The unit locks within a ±12.5% frequency range. The unit displays the "WIDE" indication.

"on"(ON): narrow lock frequency range → The unit locks within a ±100 ppm frequency range. The unit displays no indication.

3 Press the SET key.
Flashing stops and the selection of the lock range finishes.

Selecting the chase mode (when a DABK-7030 is installed) — "rE-cHASE" (RE-CHASE)

Selects chase mode.
The settings are saved when you turn the power off.

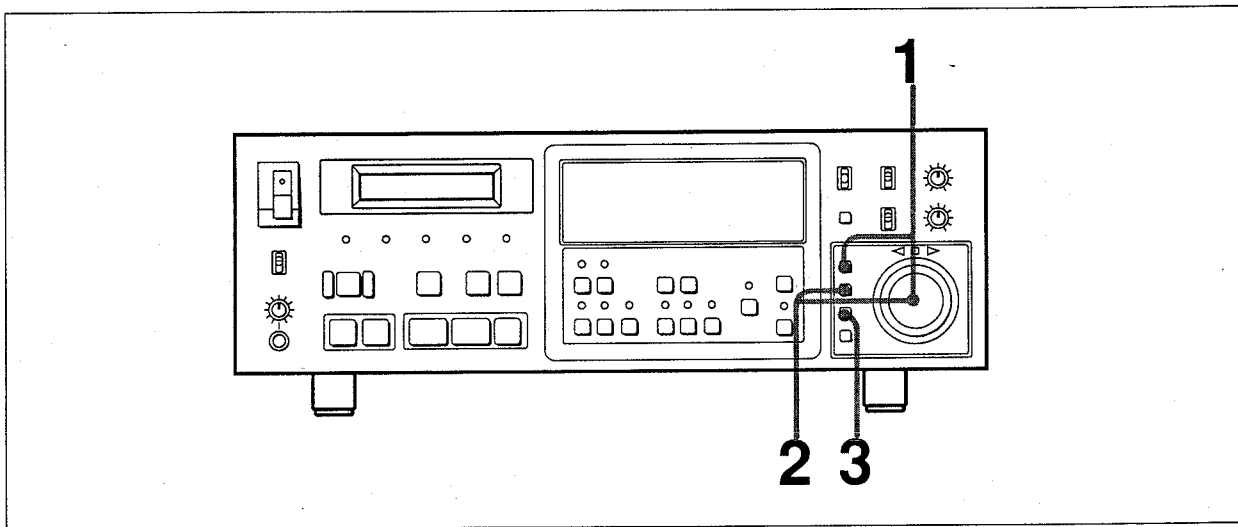**Factory-set position:** "on-1" (ON-1)
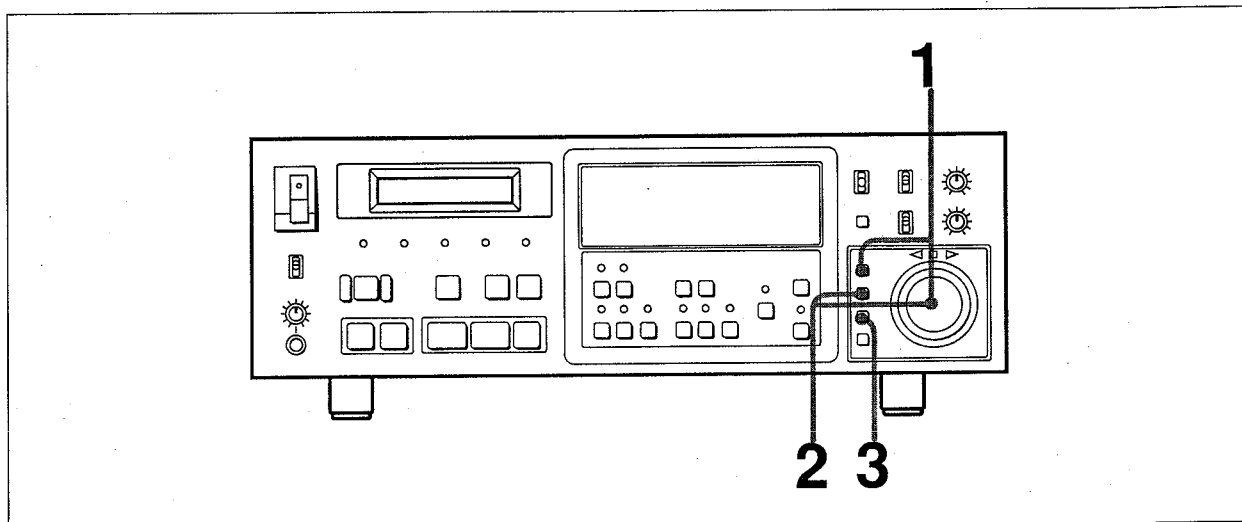
Selecting the chase mode

1 Turn the search dial while holding the MENU key down and set the display to "rE-cHASE".
The unit enters the chase mode selection process.

2 Turn the search dial while holding the DATA key down to select the chase mode.

> **"oFF" (OFF):** re-chase off (returning to normal playback mode after locking)
>
> **"on-1" (ON-1):** re-chase on (chasing continuously after locking). When the time code on the tape is not synchronized with the external time code, or when any part of the time code is missing, the unit plays back at variable speed within ± 0.2% after locking. The unit displays the "RE-CHASE" indication.
>
> **"on-2" (ON-2):** re-chase on (chasing continuously after locking). After locking, the unit plays back at normal speed. Select this mode to record after locking while rechasing. The unit dis plays the "RE-CHASE" indication.

3 Press the SET key.
Flashing stops and the selection of the chase mode is finished.

Selecting the timing of sound output when chasing (when a DABK-7030 is installed) — "cHASE-Au" (CHASE AUDIO)

Selects the timing of sound output when chasing.
The setting is saved when you turn the power off.

Factory-set position: "PLAY"

Selecting the timing of sound output when chasing

1 Turn the search dial while holding the MENU key. down and set the display to "cHASE-Au".
The unit enters the selection mode for the timing of sound output when chasing.

2 Turn the search dial while holding the DATA key down to select the timing of sound output.
By turning the search dial, the indicator flashing changes from "PLAY" to "Loc".

    "PLAY": The sound comes out when the PCM-7050/7030 enters playing mode. (You can hear the sound which the unit controls in variable-speed playback.)

    "Loc" (LOCK): The sounds come out when the chasing locks. (You cannot hear the sound in variable-speed playback.)

3 Press the SET key.
The flashing stops and the selection of the timing of sound output is finished.

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Selecting how to release chase operation mode (when a DABK-7030 is installed) — "cHASE-S" (CHASE SWITCH)

Selects whether chase operation mode is released by pressing one of the tape transport control keys (such as STOP, PLAY, and FF) or by pressing either the CHASE or EJECT key.
The setting is saved when you turn the power off.

Factory-set position: "on" (ON)
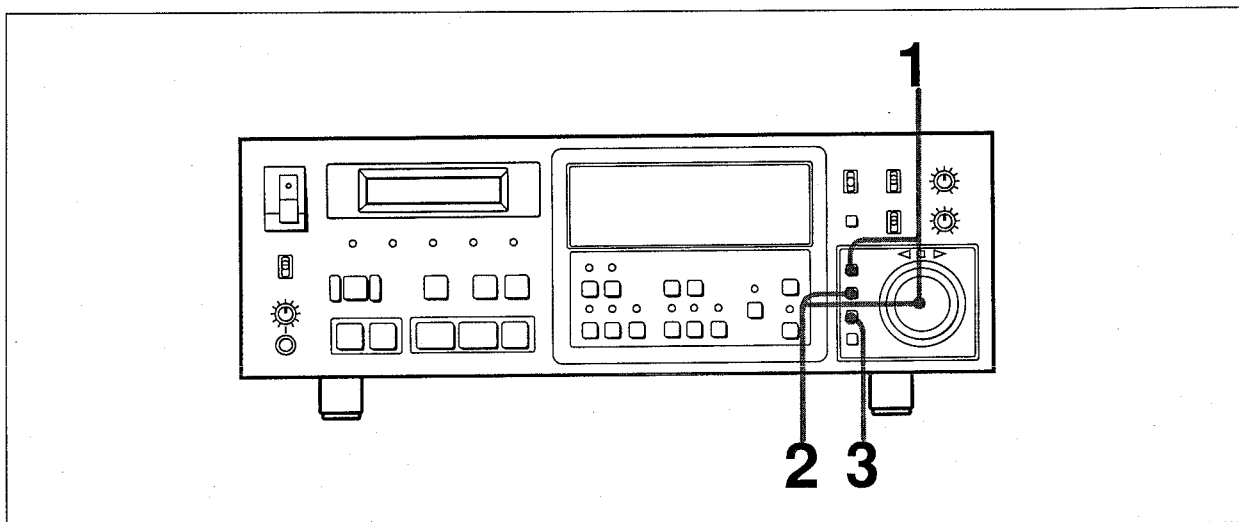
Selecting how to release chase operation mode

1 Turn the search dial while holding down the MENU key to set the display to "cHASE-S".
The unit enters the selection mode for how chase operation mode is released.

2 To select how to release chase operation mode, turn the search dial while holding the DATA key down.
By turning the search dial, the indicator changes from "on" to "on-oFF".

> **"on" (ON):** The unit releases chase operation mode when you press one of the tape transport control keys (such as STOP, PLAY, and FF).
> **"on-oFF" (ON-OFF):** The unit releases chase operation mode when you press either the CHASE or EJECT key.

3 Press the SET key.
The indicator flashing stops and selection of how to release chase operation mode terminates.
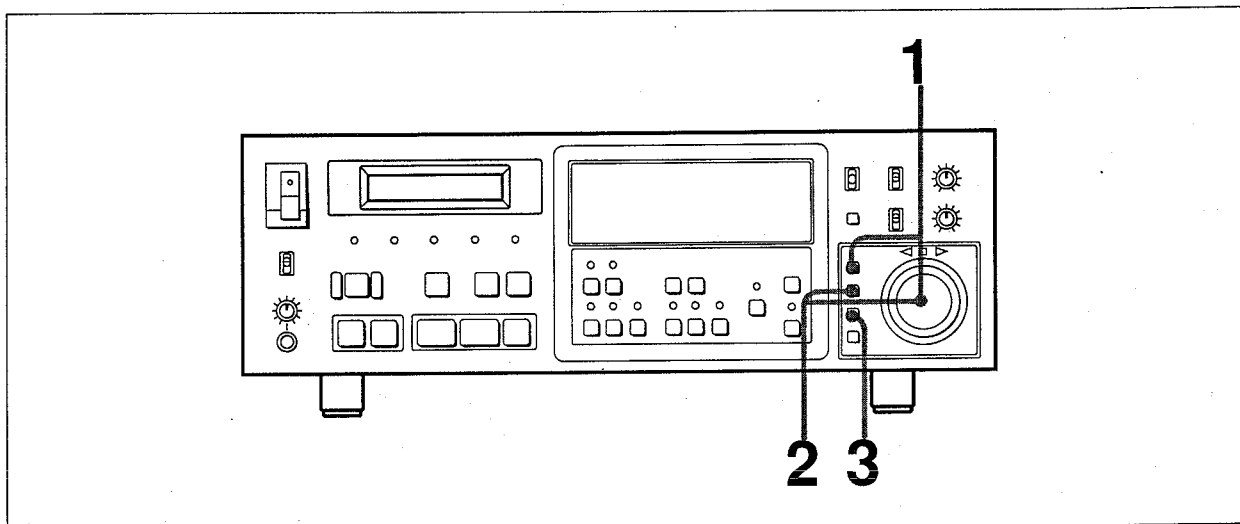
Note

When you connect the unit to the RM-D7300 Digital Audio Editor or DAE-3000 Digital Audio Editor, set this to "on".

Selecting the expanded setup menu — "[SEt Grd]" (SETUP MENU GRADE)

Selects the expanded setup menu display from the basic menu display.
The setting is saved when you turn the power off.

Factory-set position: "bASic" (BASIC)

Selecting the expanded setup menu

1 Turn the search dial while holding the MENU key down and set the display to "[SEt Grd]".
The unit enters the setup menu grade selection mode.

2 Turn the search dial while holding the DATA key down to select the setup menu level (expanded or basic).
By turning the search dial, the indicator flashing changes from "bASic" to "EnHAncED".

> **"bASic" (BASIC):** The unit enters the basic setup menu mode. You cannot select the expanded setup menu.
> The unit skips to the next menu.
> **"EnHAncEd" (ENHANCED):** The unit enters the expanded setup menu mode. You can select the expanded setup menu.

3 Press the SET key.
The flashing stops and the selection of the menu is finished.

Selecting the setup menu level for the time code — "[SEt tc]" (SETUP MENU for TIME CODE)

Selects whether to open or close the menu for the time code in the setup menu.
The setting is saved when you turn the power off.

This function is available when: the setup menu selection is "EnHAncEd" (ENHANCED).
Factory-set position: "cLoSE" (CLOSE)
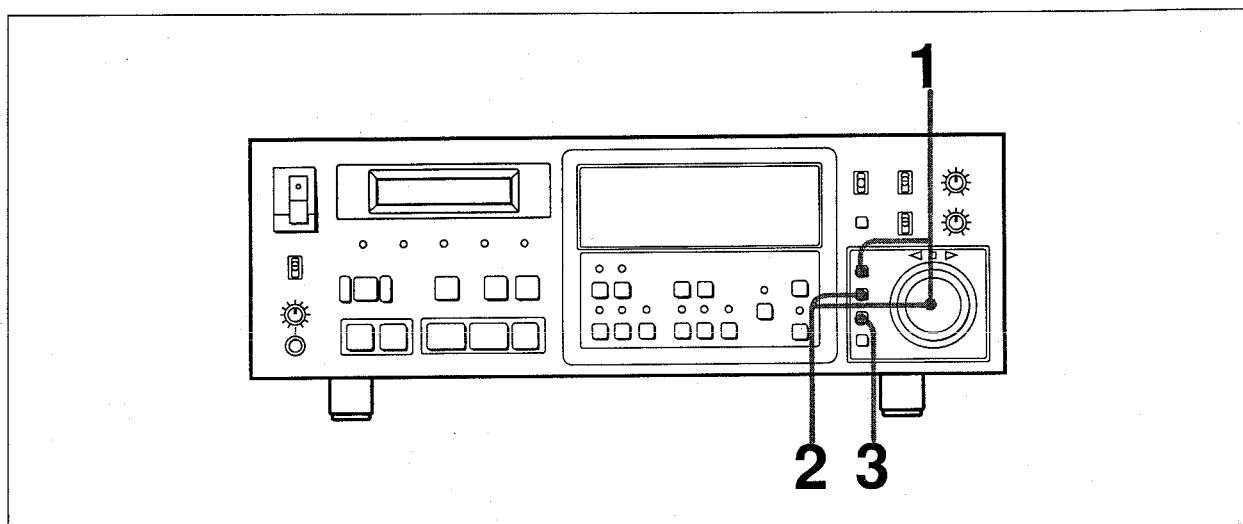
Opening or closing the setup menu for the time code

1 Turn the search dial while holding the MENU key down and set the display to "[SEt tc]".
The unit enters the mode for the setup menu for the time code.

2 Turn the search dial while holding the DATA key down to select the level of the setup menu for the time code.
By turning the search dial, the indicator flashing changes from "cLoSE" to "oPEn".

> **"cLoSE" (CLOSE):** You cannot select the setup menu for the time code.
> **"oPEn" (OPEN):** You can select the setup menu for the time code.

3 Press the SET key.
The flashing stops and the selection of the setup menu level for the time code finishes.

Selecting the operation mode of the internal time code generator — "FrEErun" (FREE RUN)

Selects the operation mode of the internal time code generator.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the time code is "oPEn" (OPEN).

Factory-set position: "oFF" (OFF)
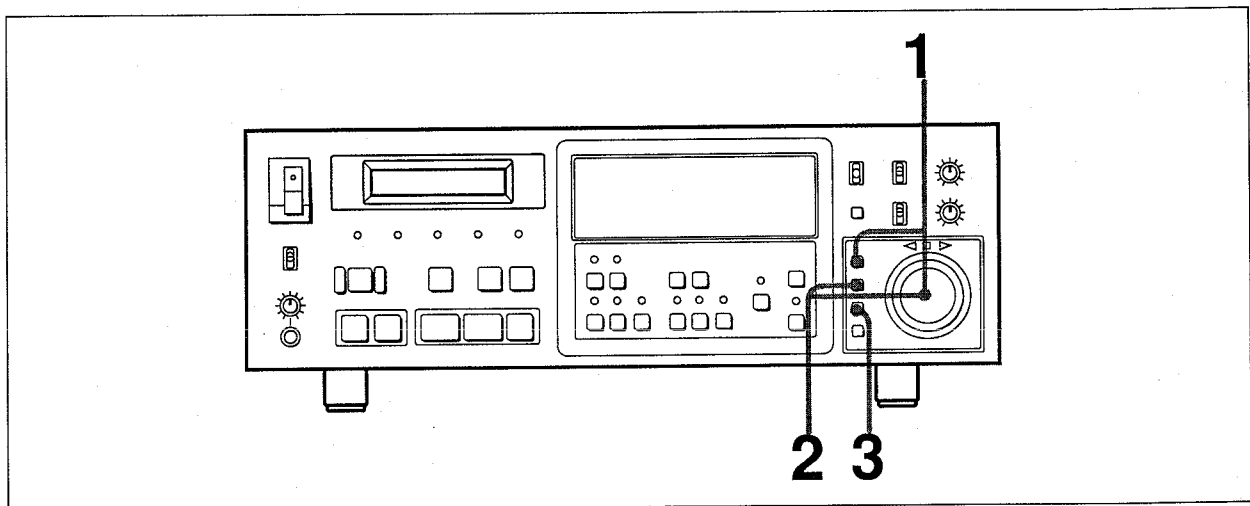
Selecting the operation mode of the internal time code generator

1 Turn the search dial while holding the MENU key down and set the display to "FrEErun".
The unit enters the operation selection mode for the internal time code generator.

2 Turn the search dial while holding the DATA key down to select operation mode of the internal time code generator.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

"oFF"(OFF): rec run or regenerate. (When the unit enters the recording mode, the unit generates the time code from the initial value. When you do not define the initial value, the unit generates the time code according to the recorded time code on the tape. If you select an external time code (when a DABK-7030 is installed), the unit generates time code according to the external time code, regardless of the tape running mode.)

"on"(ON): free run. (The unit generates the time code at all time having no relation to the tape running mode.) → The unit displays the "FREE RUN" indication.

3 Press the SET key.
The flashing stops and the selection of the operation mode of the internal time code generator finishes.

The initial value in the free run mode
- When you turn the power on: The unit defines "00H00M00S00F" as its initial value.
- When you change the recording time code selecting switch from the EXT position to INT position: the unit defines the external time code as the initial value.
- When you set the initial value on the "GEN SET TIME" of the display key menu: the unit defines the set time as the initial value.

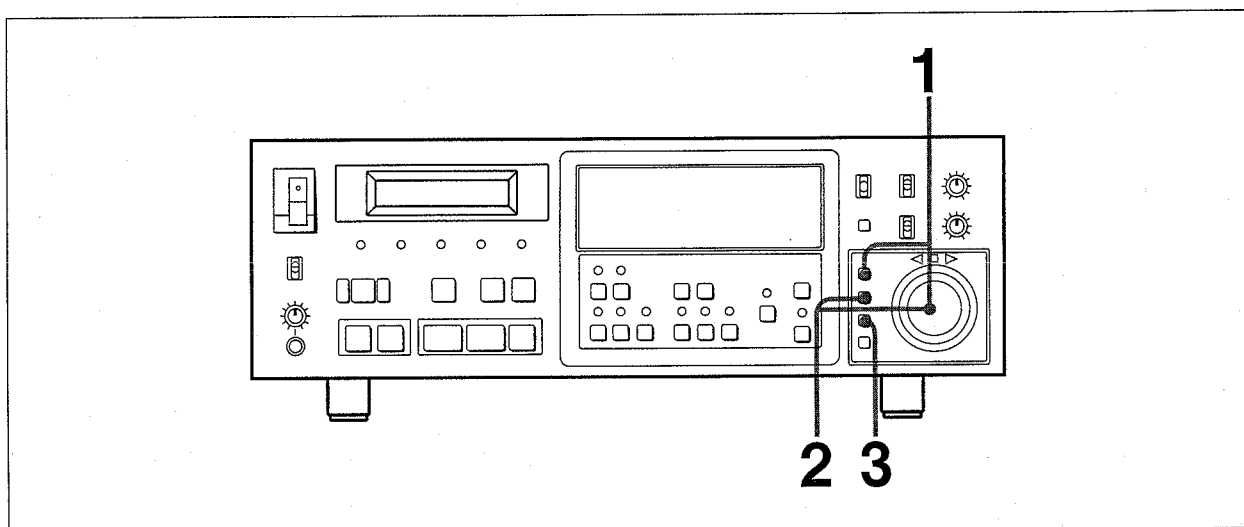## Selecting the time code output (when a DABK-7030 is installed) — "GEn out" (GENERATOR OUT)

You can select the time code (the playback time code when OFF and the generator's time code when ON) output from the TIME CODE OUTPUT connector at the rear.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the time code is "oPEn" (OPEN).
Factory-set position: "oFF" (OFF)

Selecting the time code output

1 Turn the search dial while holding the MENU key down and set the display to "GEn out".
The unit enters the selecting mode of the time code output.

2 Turn the search dial while holding the DATA key down to select the time code output.
By turning the search dial, the indicatior flashing changes from "oFF" to "on".

> **"oFF" (OFF):** The unit sends the playback time code.
> **"on" (ON):** The unit sends the generated time code of the internal time code generator.

3 Press the SET key.
The flashing stops and the selection of the time code output finishes.

Selecting whether to regenerate the external time code or not (when a DABK-7030 is installed) — "tc rEGEn" (TIME CODE REGENERATE)
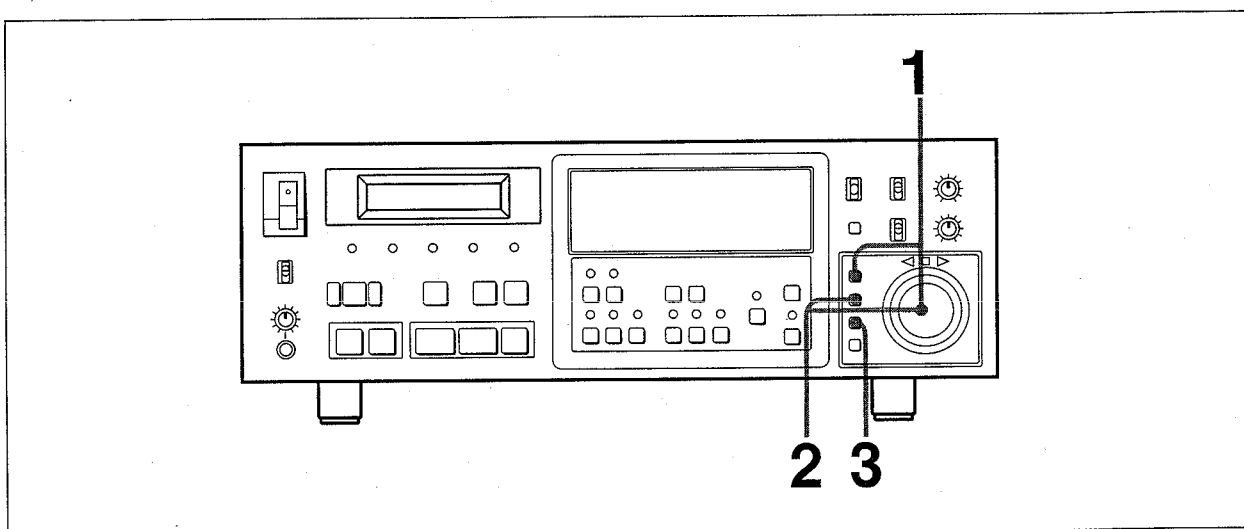
You can select whether to regenerate the external time code (ON) or not (OFF).
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for time code is "oPEn" (OPEN).
Factory-set position: "on" (ON)

Selecting whether to regenerate the external time code or not

1 Turn the search dial while holding the MENU key down and set the display to "tc rEGEn".
The unit enters the selection mode of whether or not to regenerate the external time code.

2 Turn the search dial while holding the DATA key down to select whether or not.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

> **"oFF" (OFF):** The unit doesn't regenerate the external time code. The unit receives and generates the external time code as it is even if the external time code has the jitters (fluctuations).
>
> **"on" (ON):** The unit regenerates the external time code. The unit corrects the time code generation and the phase as much as possible.

3 Press the SET key.
The flashing stops and the selection whether to regenerate or not finishes.
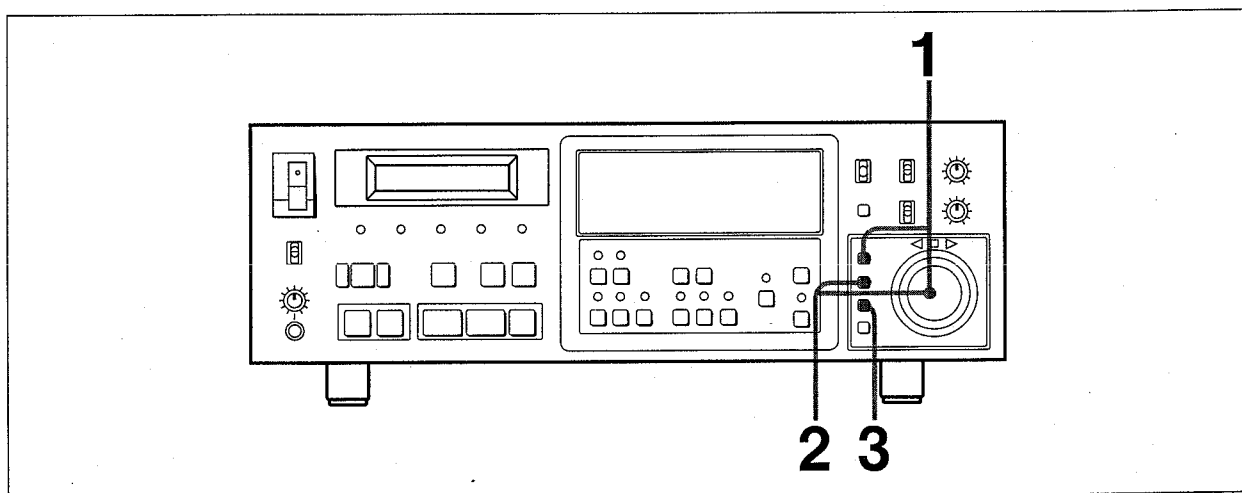
Selecting the user bit when recording (when a DABK-7030 is installed) — "rEc ub" (REC USER BIT)

Selects the user bit according to the setting of the recording time code selector (TC SEL) or the user bit of the internal time code generator (INTERNAL) when recording.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the time code is "oPEn" (OPEN).
Factory-set position: "tc SEL" (TC SEL)

Selecting the user bit when recording

1 Turn the search dial while holding the MENU key down and set the display to "rEc ub".
The unit enters the user bit selection mode.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "int" to "tc SEL".

> **"int"(INTERNAL):** The unit records the user bit of the internal time code generator or the user bit of the time code on the recorded tape.

"tc SEL" (TC SEL):
- When "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL", and when the recording time code selector is set to "INT", or when "rEc tc" is set to "int", the unit records the user bit of the internal time code generator or the user bit of the time code onto the recorded tape.
- When "rEc tc" (REC TIME CODE) in the setup menu is set to "rEAr SEL", and the recording time code selector is set to "EXT", or when "rEc tc" is set to "inPut", the unit records the user bit of the external time code.

3 Press the SET key.
The flashing stops and the selection of the user bit finishes.

Selecting whether to display the user bit data for the DISPLAY key menu or not — "ub diSP" (USER BIT DISPLAY)
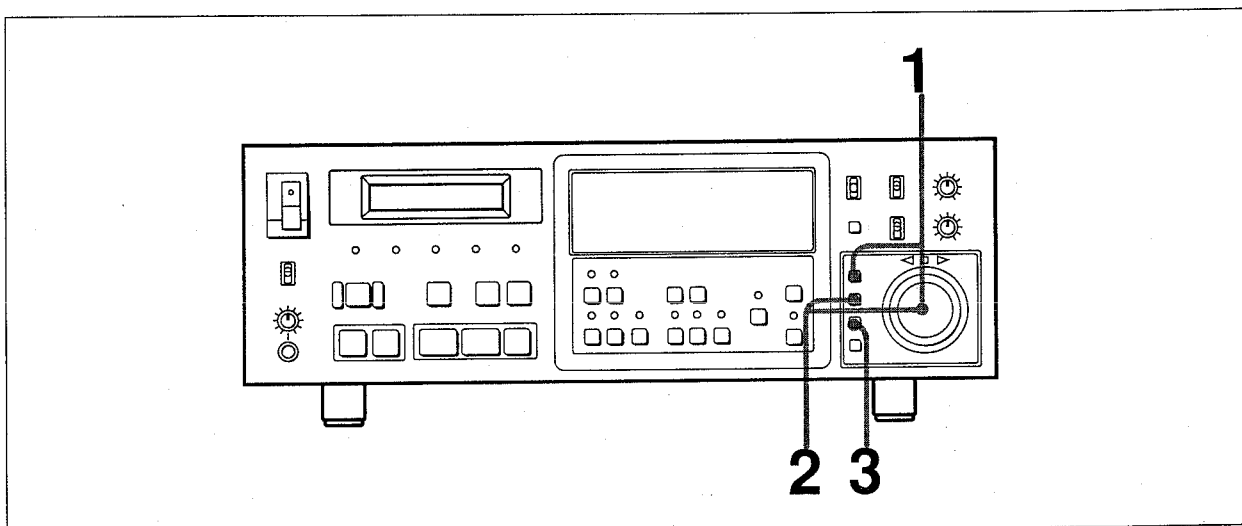
Selects whether to display the user bit data for the display key menu (ON) or not (OFF).
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the time code is "oPEn" (OPEN).

Factory-set position: "oFF" (OFF)

Selecting whether to display the user bit data for the display key menu or not

1 Turn the search dial while holding the MENU key down and set the display to "ub diSP".
The unit enters the selecting mode of whether to display the user bit data for the display key menu or not.

2 Turn the search dial while holding the DATA key down to select whether or not.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

"oFF" (OFF): The unit doesn't display the user bit data for the display key menu.

"on" (ON): The unit displays the user bit data for the display key menu.

3 Press the SET key.
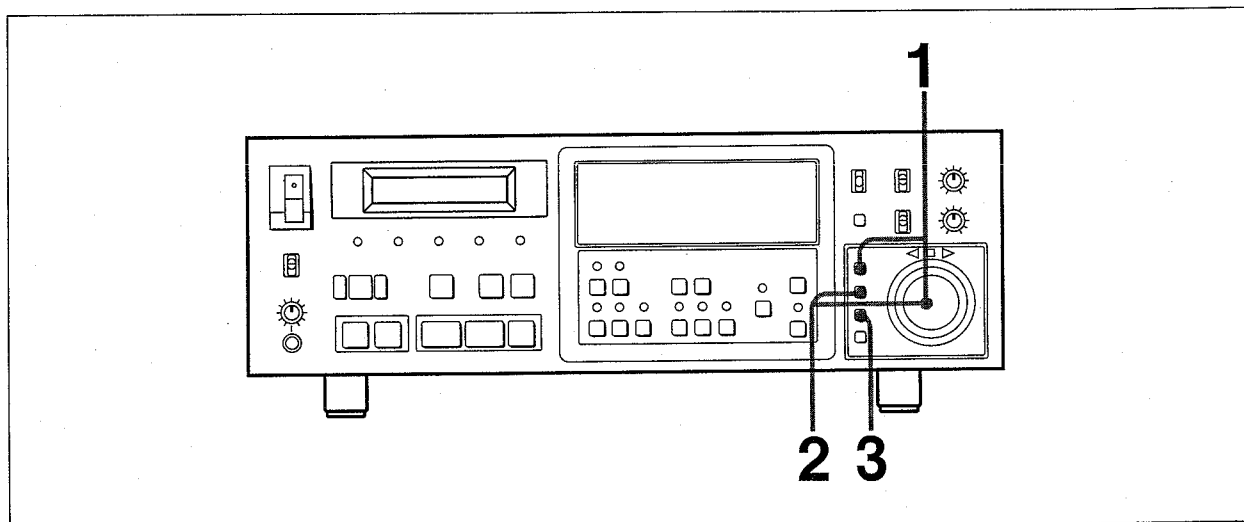The flashing stops and the selection whether to display the user bit data or not finishes.

Selecting whether to apply the phase adjustment of the time code output to the analog audio signals or digital audio signals (when a DABK-7030 is installed) — "tc dLY" (TIME CODE DELAY)

Selects whether to apply the phase adjustment of the time code output signal to the analog audio signals (ANALOG OUTPUT) or the digital audio signals (DIGITAL OUTPUT). The selected audio output signals and time code output are output maintaining the phase relationship between both signals when both signals were recorded.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the time code is "oPEn" (OPEN).
Factory-set position: "d out" (DIGITAL OUTPUT)

Selecting whether to apply the phase adjustment of the time code output
to the analog audio output signals or digital audio output signals

1 Turn the search dial while holding the MENU key down and set the display to "tc dLY".
The unit enters the selecting mode.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "A out" to "d out".
> **"A out" (ANALOG OUTPUT):** The unit adjusts the phase with the analog audio output signals.
> **"d out" (DIGITAL OUTPUT):** The unit adjusts the phase with the digital audio output signals.

3 Press the SET key.
The flashing stops and the selection of whether to apply the phase adjustment of the time code output to the analog audio output signals or digital audio output signals finishes.

Phase adjustment between the input time code signal and the input audio signals for recording
The phase of the input audio signals (analog or digital) selected according to the setting of the AUDIO INPUT selector on the front panel is adjusted to the input time code automatically.
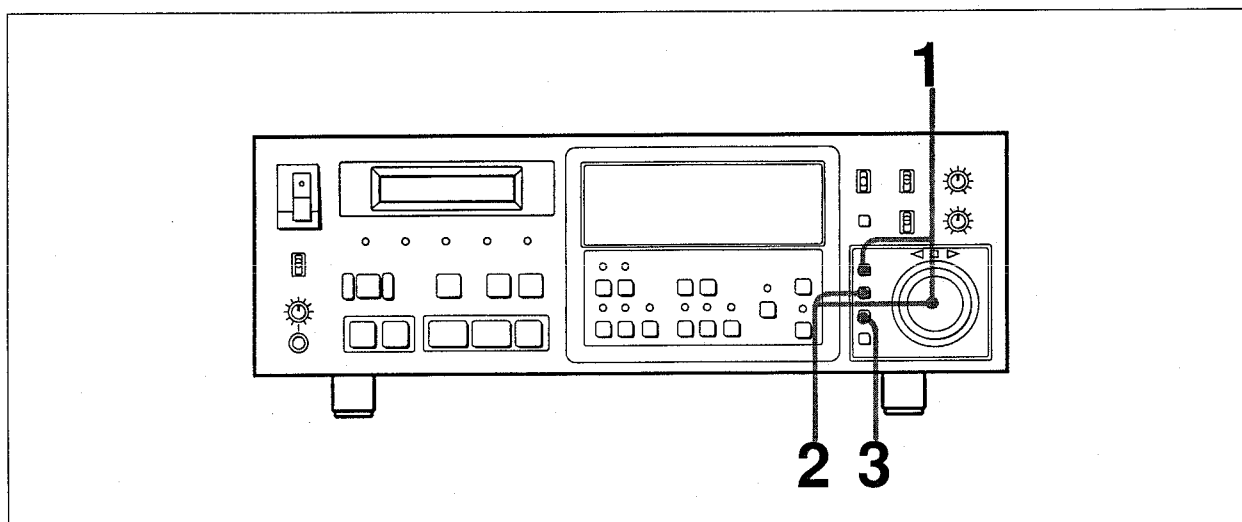
Selecting whether to automatically reset the elapse time when detecting the start ID — "ELAPSE" (ELAPSE)

Automatically resets the elapse time when the unit detects a start ID on the tape. You can use the elapse time as the program time when a start ID is written at the top of the program.
The setting is saved when you turn off the power.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED)
• the setup menu selection for the system is oPEn" (OPEN)
Factory-set position: "ELAPSE" (ELAPSE)

Selecting automatic reset of the elapse time according to a start ID

1 Turn the search dial while holding the MENU key down and set the display to "ELAPSE".

2 Turn the search dial while holding the DATA key down to select whether to reset elapse time when detecting a start ID.
By turning the search dial, the indicator changes from "ELAPSE" to "ProG".

> **"ELAPSE" (ELAPSE):** The unit resets the elapse time when you press the RESET key.
> **"ProG" (PROGRAM):** The unit resets the elapse time when you press the RESET key or when the unit detects a start ID.

3 Press the SET key.
The display stops flashing and the selection of automatic reset of the elapse time when the unit detects a start ID terminates.
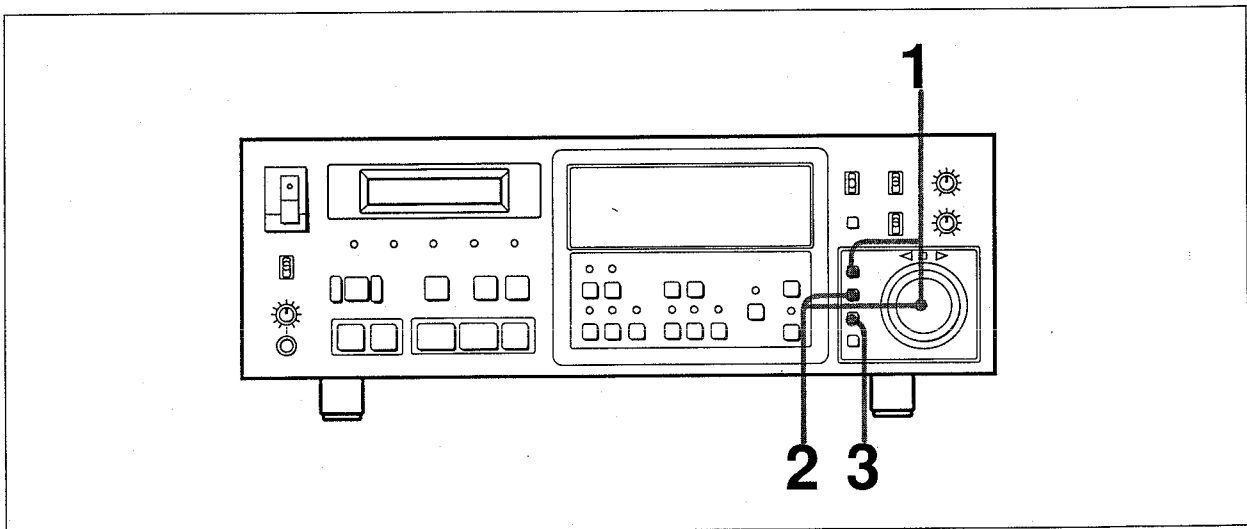
Selecting the setup menu level for the system control — "[SEt SYS]" (SETUP MENU for SYSTEM CONTROL)

Selects whether to open the setup menu for the system (OPEN) or not (CLOSE).
The setting is saved when you turn the power off.

This function is available when: the setup menu selection is "EnHAncEd" (ENHANCED).
Factory-set position: "cLoSE" (CLOSE)

Selecting the setup menu level for the system control

1 Turn the search dial while holding the MENU key down and set the display to "[SEt SYS]".
The unit enters the setup menu selection mode for the system.

2 Turn the search dial while holding the DATA key down to select the setup menu for the system.
By turning the search dial, the indicator flashing changes from "cLoSE" to "oPEn".

     "cLoSE" (CLOSE): You cannot select the setup menu for the system.
     "oPEn" (OPEN): You can select the setup menu for the system.

3 Press the SET key.
The flashing stops and the selection of the setup menu level for the system finishes.

Selecting whether to automatically write the Start ID or not during assemble recording — "S-id Auto" (START ID AUTO REC)
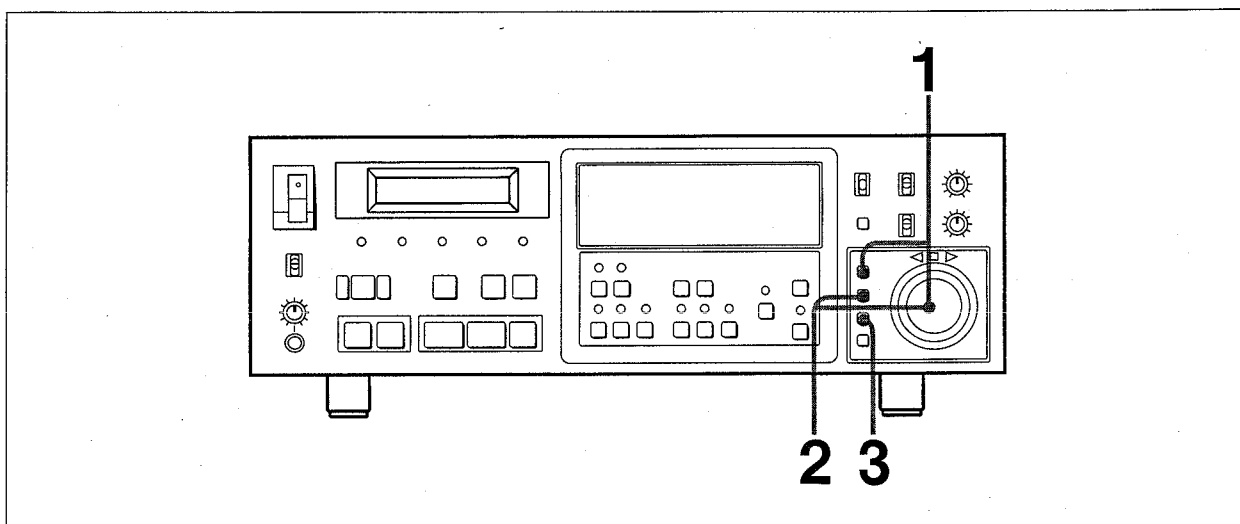
Selects whether to automatically write the Start ID (ON) or not (OFF) during assemble recording.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the system is "oPEn" (OPEN).

Factory-set position: "oFF" (OFF)

Selecting whether to automatically write the Start ID or not during assemble recording

1 Turn the search dial while holding the MENU key down and set the display to "S-id Auto".
The unit enters the selecting mode for automatically writing the Start ID during assemble recording.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

> **"oFF" (OFF):** The unit doesn't automatically write the Start ID during assemble recording.
>
> **"on" (ON):** The unit automatically writes the Start ID and the Program number at the recording start point during assemble recording. The unit displays the "AUTO REC" indication on the display. If you reposition the tape to start recording from another point once the unit has finished recording, the unit may write the Program numbers out of order. Renumber the Program numbers.

3 Press the SET key.
The flashing stops and the selection of whether or not to automatically write the Start ID during assemble recording is complete.

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Selecting the ID to be written/erased (start ID/skip ID/end ID) — "id rEc" (ID REC)

Selects which ID from among the start ID, skip ID and end ID, will be written/erased when you press the START ID WRITE/ERASE key. The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED)
• the setup menu selection for the system is "oPEn" (OPEN)
Factory-set position: "StArt id" (START ID)
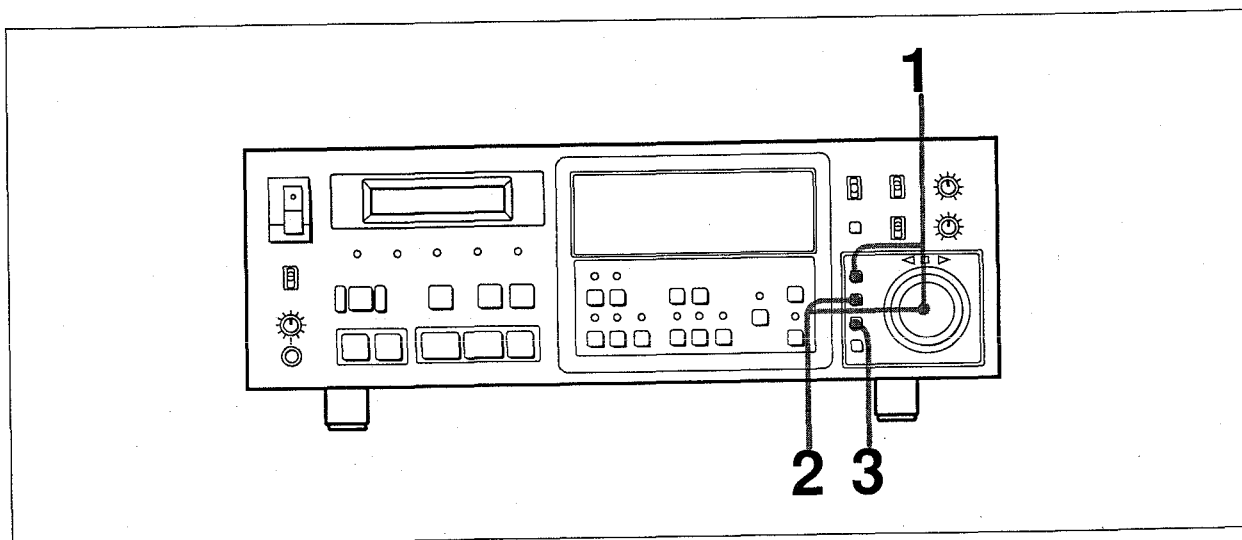
Selecting an ID to be written/erased

1 Turn the search dial while holding the MENU key down and set the display to "id rEc".
The unit enters selection mode for selecting an ID to be written/erased.

2 Turn the search dial while holding the DATA key down to select ID to be written.
As you turn the search dial, the indicator changes as below.
  "StArt id" (START ID): Start ID
  "SHort id" (SHORTENING ID): Skip ID
  "End id" (END ID): End ID

3 Press the SET key.
The display stops flashing and selection of the ID to be written terminates.

Selecting whether to automatically locate a start ID when detecting a skip ID
— "Auto StoP" (AUTO STOP)

Selects whether to locate the previous or next start ID when the unit detects a skip ID during playback.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED)
• the setup menu selection for the system is "oPEn" (OPEN)
Factory-set position: "oFF" (OFF)
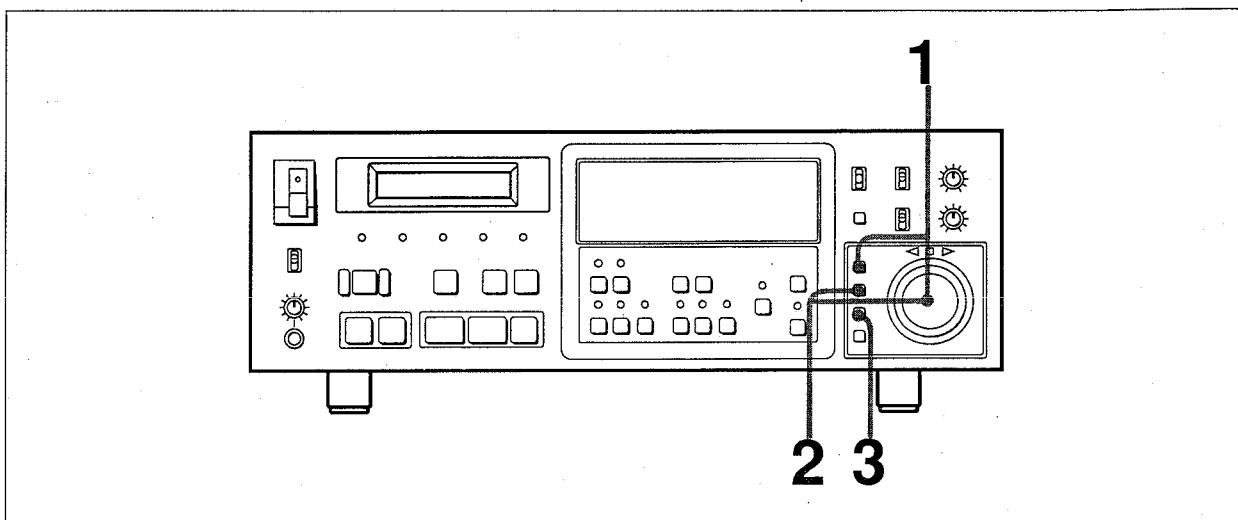
Selecting automatic locating of a start ID according to a skip ID

1 Turn the search dial while holding down the MENU key and set the display to "Auto StoP".
The unit enters the previous or next start ID location selection mode.

2 Turn the search dial while holding the DATA key down to select whether to locate the previous or next start ID when detecting a skip ID.
As you turn the search dial, the indicator changes as below.

"oFF" (OFF): The unit does not locate a start ID, even when the unit detects a skip ID.

"on-n" (ON-NEXT): The unit locates the next start ID (same operation as when you press the NEXT key).

"on-P" (ON-PREVIOUS): The unit locates the previous start ID (same operation as when you press the PREVIOUS key).

3 Press the SET key.
The display stops flashing and selection of automatic locating of a start ID when detecting a skip ID terminates.

Note

In memory start playback mode, the unit runs the tape a maximum of 1.5 seconds ahead of the point on the tape to be played back. Thus, if the skip ID was written at the end of the program, the sound will be cut. When using this function with the memory start function, write a skip ID of 2 seconds or more on the tape, separate from the end of the program.

Selecting whether to automatically locate a start ID when a cassette is inserted — "Auto SrcH" (AUTO SEARCH)

Selects whether to automatically locate the first start ID after rewinding the tape to the tape top, whenever you insert a cassette. The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the system is "oPEn" (OPEN)

Factory-set position: "oFF" (OFF)
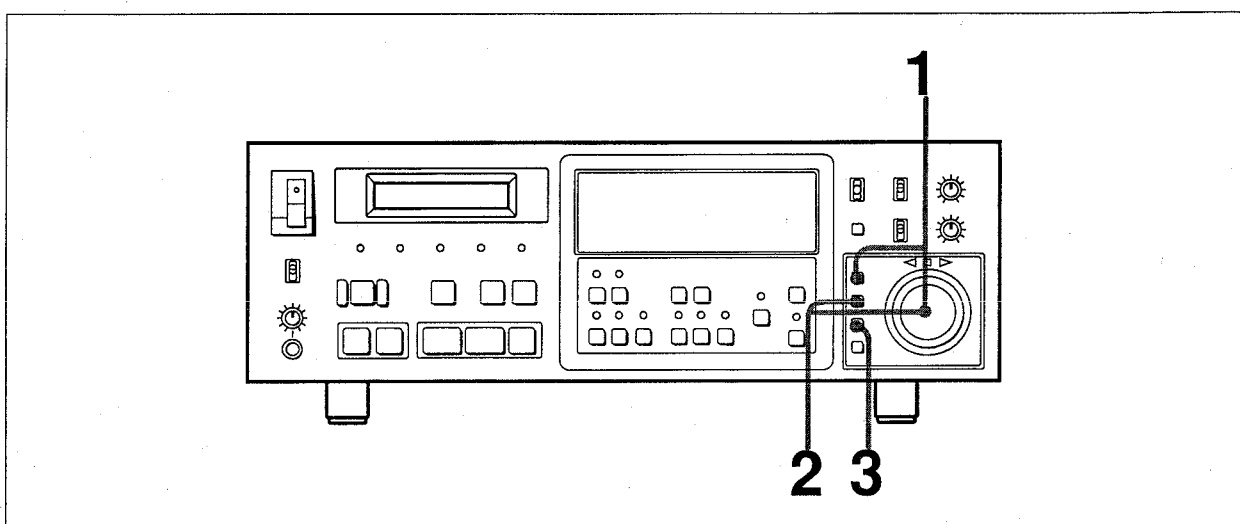
Selecting automatic locating of a start ID when inserting a cassette

1 Turn the search dial while holding down the MENU key and set the display to "Auto SrcH".
The unit enters start ID automatic location selection mode.

2 Turn the search dial while holding the DATA key down to select whether to locate the first start ID, whenever you insert a cassette. As you turn the search dial, the indicator changes from "oFF" to "on".

"oFF" (OFF): The unit does not perform location.
"on" (ON): The unit locates the first start ID after rewinding the tape to the tape top after a cassette is inserted (same operation as when you press the NEXT key).
When a cassette is not inserted, "Auto SrcH" appears in the display.

3 Press the SET key.
The display stops flashing and selection of start ID automatic location when inserting a cassette terminates.

Setting whether to preroll stop before the point where an ID is written at start ID locating or program-number locating — "PrEroLL" (PREROLL)

Selects whether to locate the tape ahead of the point where an ID is written at start ID locating or program-number locating.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the system is "oPEn" (OPEN)

Factory-set position: "oFF" (OFF)
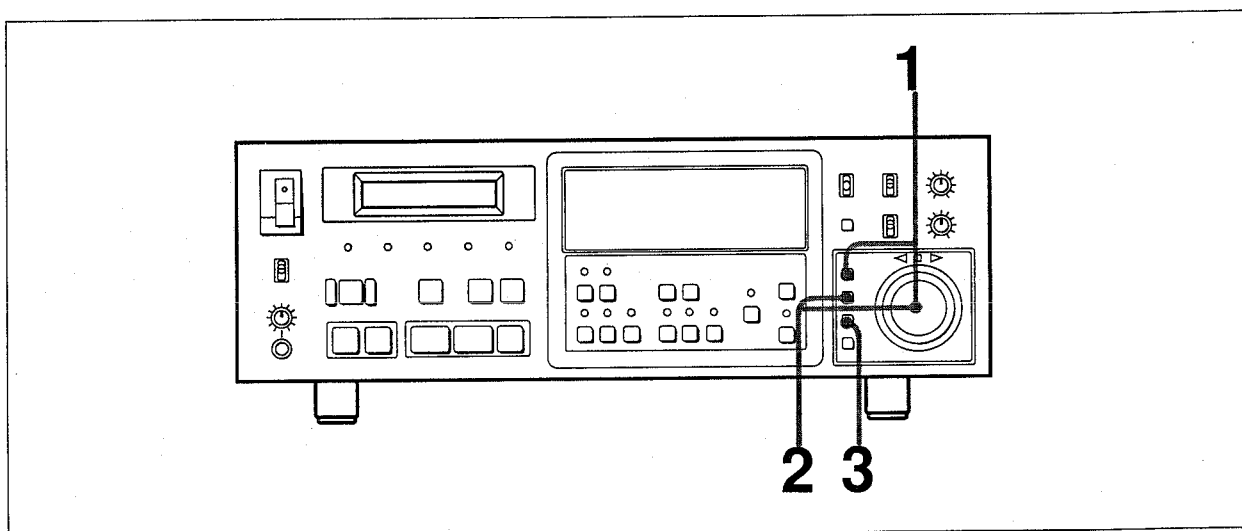
Selecting a preroll stop at a start ID locating or program-number locating

1 Turn the search dial while holding down the MENU key and set the display to "PrEroLL".
The unit enters the mode for setting preroll stop at start ID locating and program-number locating.

2 Turn the search dial while holding the DATA key down to select whether to preroll-stop at start ID locating and program-number locating.
As you turn the search dial, the flashing indicator changes from "oFF" to "on".

> **"oFF" (OFF):** The unit does not preroll.
> **"on" (ON):** The unit prerolls.

3 Press the SET key.
The display stops flashing and selection of preroll stop at start ID locating and program number locating terminates.

Memo
When you use this function, the position to be located depends on the memory start mode setting.

When memory start mode is set to "OFF"
The unit positions the tape about one second before the position where an ID is written. This mode ensures that the sound is played back in its entirety.

When memory start mode is set to "ON"
The unit stores the sound starting 0.3 seconds before the position where an ID is written in sound memory as the memory start point, then enters memory standby mode. This mode is effective when a start ID is written after the sound.

Note

When the unit preroll-stops when memory start mode is set to OFF, the program number is decreased by 1.
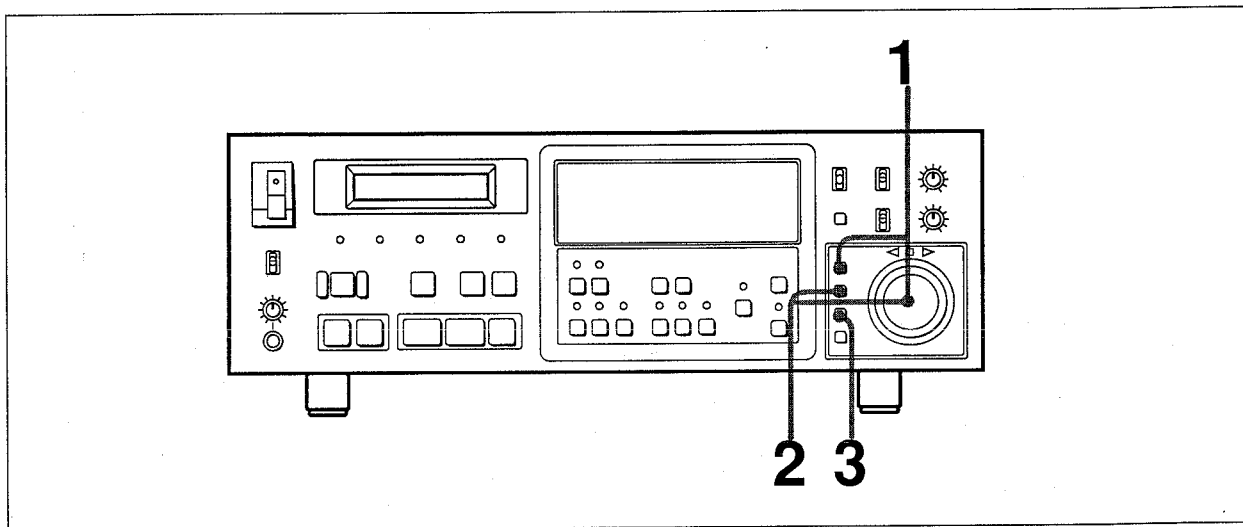
Selecting the copy ID which will be recorded within the main ID — "coPY id" (COPY ID)

Selects the copy ID which will be recorded within the main ID.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "PEr" (PERMIT)

Selecting the copy ID which will be recorded within the main ID

1 Turn the search dial while holding the MENU key down and set the display to "coPY id".
The unit enters the copy ID selection mode.

2 Turn the search dial while holding the DATA key down to select the copy ID.
By turning the search dial, the indicator flashing changes as below.
> **"PEr" (PERMIT):** The unit records the copy ID (00) of which the unit permits to copy.
> **"inh" (INHIBIT):** The unit records the copy ID (10) of which the unit inhibits to copy.
> **"PrErEc" (PRERECORDED):** The unit records the copy ID (11) for the pre-recorded tape.

3 Press the SET key.
The flashing stops and selection of the copy ID which will be recorded within the main ID finishes.

The copy ID when digitally copying the digital audio signal input from a consumer digital audio tape recorder
The copy ID to be recorded on the unit is as follows:
- **When the copy bit is set to "1" (permit):** The unit records "00".
- **When the copy bit is set to "0" (inhibit):** The unit records "10".

Digital copy of the tape with the copy ID recorded on the unit
To copy the tape with the copy ID recorded on the unit to an SCMS (Serial Copy Management System) digital audio tape recorder (consummer DAT recorder), the generation of the digital copy allowed for the tape is set as follows:
- **When "00" (PERMIT) is recorded:** Copy generation is not limited.
- **When "10" (INHIBIT) is recorded:** Digital copy is not allowed.
- **When "11" (PRERECORDED) is recorded:** One generation of digital copy is allowed.

Selecting whether to synchronize the playback time code with the phase of the input video signal during playback (when a DABK-7030 is installed) — "SYncPb" (SYNC PB)
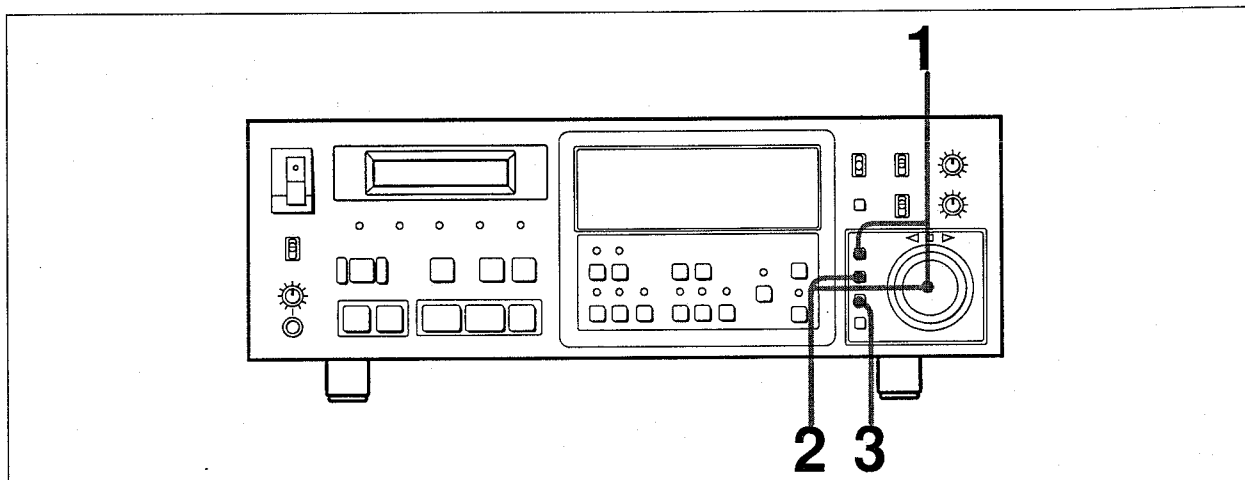
Selects whether to synchronize the playback time code with the phase of the input video signal during playback (it is controlled by a variable speed function until the sync locks). Select this when an external video sync signal (except a rectangular wave) is input to the REF VIDEO INPUT connector and when the time code format is not set to film time code.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "EnAbLE" (ENABLE)

Selecting whether to synchronize the playback time code with the phase of the input video signal during playback

1 Turn the search dial while holding the MENU key down and set the display to "SYncPb".
The unit enters the selecting mode of whether to match the sync of the input video signal with the playback time code.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "EnAbLE" to "diSAbLE".
"EnAbLE" (ENABLE): The unit matches the phase of the playback time code with that of the input video sync signal.
"diSAbLE" (DISABLE): The unit doesn't match both phases. It plays back in the normal playback mode.

3 Press the SET key.
The flashing stops and the selection of whether to synchronize the playback time code with the phase of the input video signal during playback finishes.

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Note

When you set only the above item to "ENABLE", "SYNC PB" does not appear on the display. When playback starts while inputting the video sync signal, "SYNC PB" appears. When playback stops, it disappears. To match the frame phase between the unit and the video equipment, set "SYnc Pb" to "ENABLE".
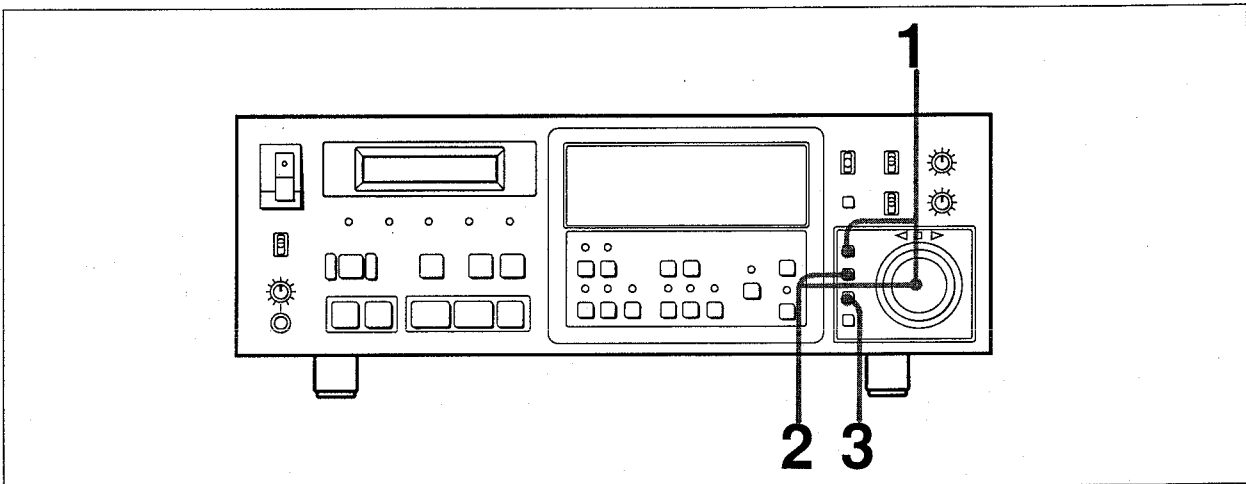
Selecting whether to stop with rollback — "rLb StoP" (ROLLBACK STOP)

You can select whether to stop with rollback (ON) or not (OFF) when the tape stops in the assemble recording mode.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "on" (ON)

Selecting whether to stop with rollback

1 Turn the search dial while holding the MENU key down and set the display to "rLb StoP".
The unit enters the selecting mode of whether to stop with rollback or not.

2 Turn the search dial while holding the DATA key down to select whether or not to stop with rollback.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

> **"oFF" (OFF):** The unit doesn't stop with rollback when the tape stops in the assemble recording mode.
> **"on" (ON):** The unit stops with rollback when the tape stops in the assemble recording mode.

3 Press the SET key.
The flashing stops and selection of whether to stop with rollback or not finishes.

The operation when the setting for rollback is set to ON
When the setting for the rollback is set to ON, the tape is rolled back about 2 seconds from the point you have pressed the STOP key, and the tape stops. If you restart assemble recording while the unit is in this state, you can connect the signal to the last recorded signal.

Selecting chase operation mode while the PCM-7050/7030 is performing preview or auto edit (when a DABK-7030 is installed) — "Ed cHASE" (EDIT CHASE)

In an editing system consisting of a player, recorder, and RM-D7300 Digital Audio Editor, selects whether the player to be connected to the unit is another PCM-7050/7030 or other equipment which has a 9-pin remote connector.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "oFF" (OFF)
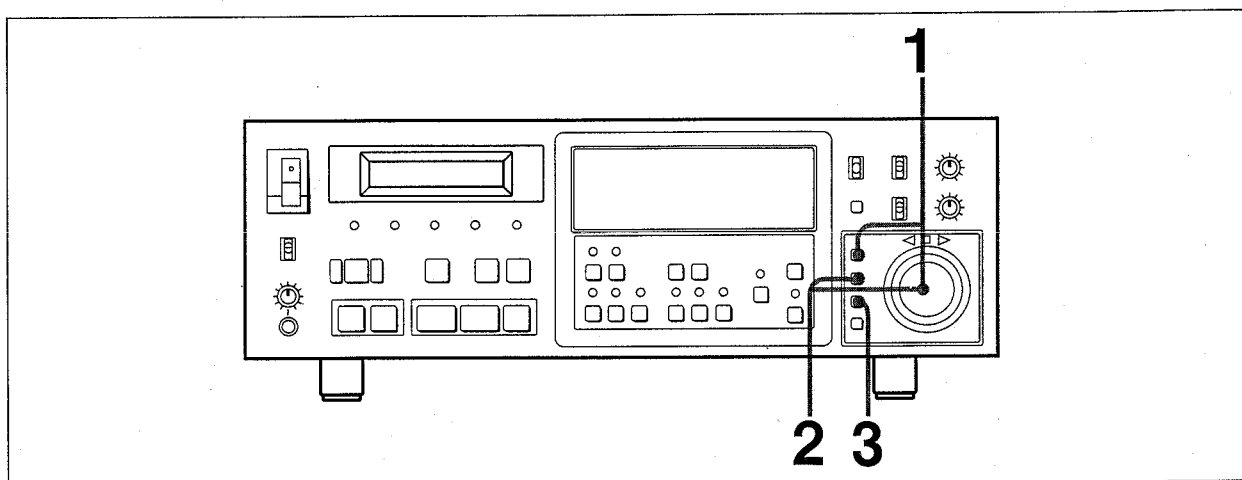
Selecting chase operation mode while the PCM-7050/7030 is performing preview or auto edit

1 Turn the search dial while holding down the MENU key to set the display to "Ed cHASE".
The unit enters chase operation selection mode.

2 To select chase operation mode, turn the search dial while holding down the DATA key.
By turning the search dial, the indicator changes from "oFF" to "on".

  "oFF" (OFF): The player PCM-7050/7030 chases the recorderPCM-7050/7030 when the recorder PCM-7050/7030 performs preview or auto edit.

  "on" (ON): The recorder PCM-7050/7030 chases the player (any equipment except the PCM-7050/7030) when the PCM-7050/7030 performs preview or auto edit.

3 Press the SET key.
The indicator stops flashing and selection of the chase operation mode terminates.

Note

This menu is available when the RM-D7300 Digital Audio Recorder is of version 2.0 or higher. When the RM-D7300 is of version 1.0, set this menu to "oFF".

Selecting whether to activate the memory start when you turn the power on — "iS dFLt" (MEMORY START DEFAULT)

Selects whether to activate the memory start when you turn the power on (ON) or not (OFF).
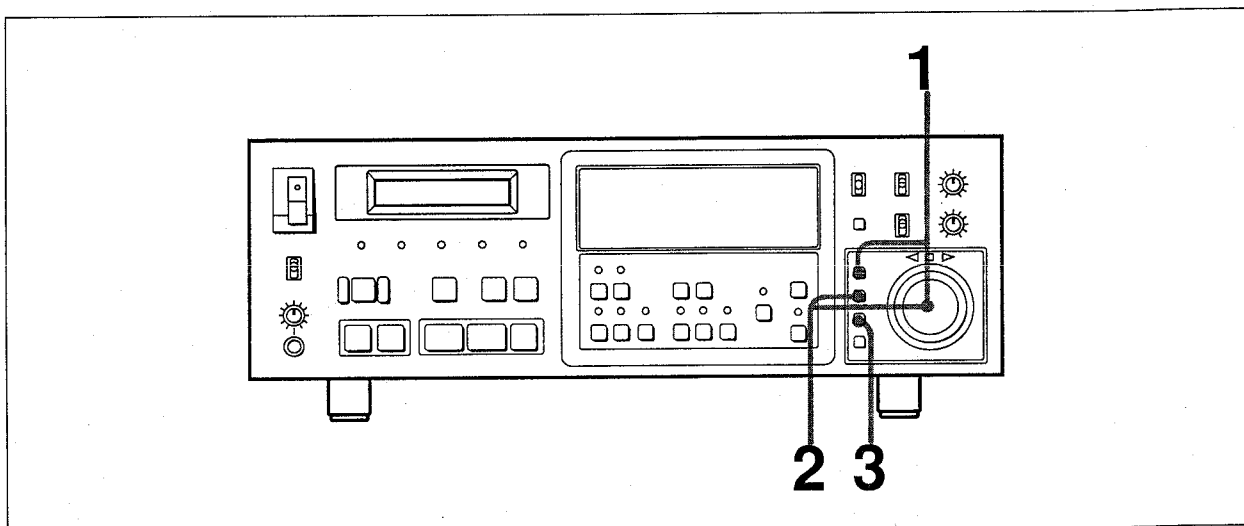
The setting is saved when you turn the power off.

For the PCM-7030, this function is available only when the optional DABK-7032 board is installed.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the system is "oPEn" (OPEN).

Factory-set position: "oFF" (OFF)

Selecting whether to activate memory start when power-on

1 Turn the search dial while holding the MENU key down and set the display to "iS dFLt".
The unit enters the selecting mode of whether to activate memory start when power-on.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "oFF" to "on".

"oFF" (OFF): The unit doesn't activate memory start when power-on.

"on" (ON): The unit activates memory start when power-on.

3 Press the SET key.
The flashing stops and the selection of whether to activate the memory start when power-on or not finishes.

Note

Keep the setting at "on" to be able to use the unit always in memory start mode.

Selecting the duration (delay time) to output the sound after pressing the PLAY key for memory start playback — "iS dLY-t" (MEMORY START DELAY TIME)

You can select the duration (delay time) to output the sound after pressing the PLAY key for memory start playback.
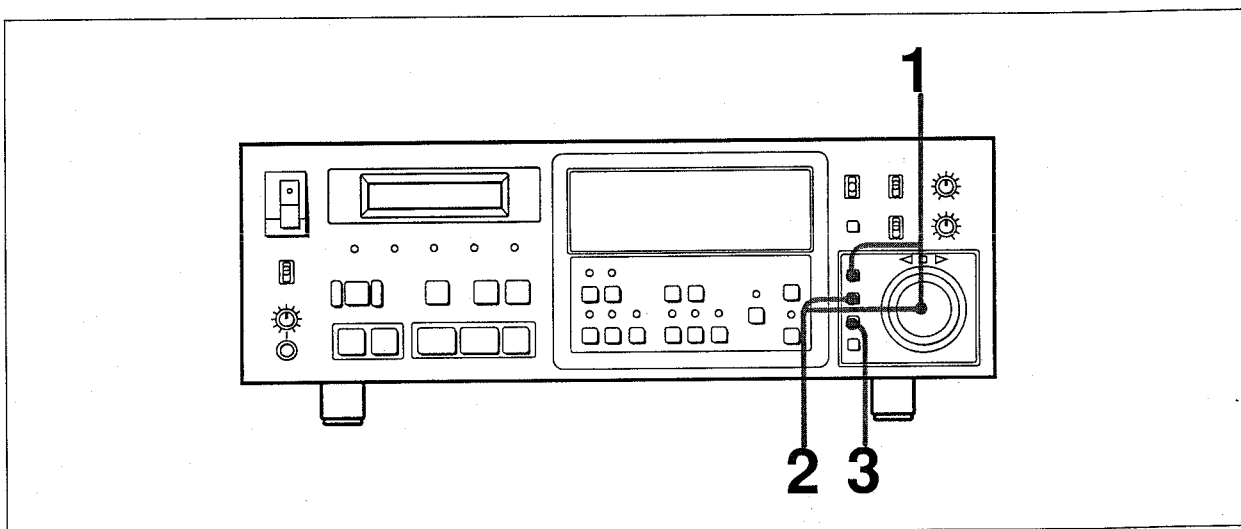The setting is saved when you turn the power off.
For the PCM-7030, this function is available only when the optional DABK-7032 board is installed.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the system is "oPEn" (OPEN).

Factory-set position: "0" (no duration)

Selecting the duration (delay time) to output the sound after pressing the PLAY key for memory start playback .

1 Turn the search dial while holding the MENU key down and set the display to "iS dLY-t".
The unit enters the selecting mode of the duration (delay time) to output the sound after pressing the PLAY key for memory start playback.

2 Turn the search dial while holding the DATA key down to select the duration.

By turning the search dial, the indicator flashing changes as below:

"0" (0msec): The duration (delay time) is 0 milliseconds (no duration).

"50" (50msec): The duration (delay time) is 50 milliseconds (0.05 seconds).

"100" (100msec): The duration (delay time) is 100 milliseconds (0.1 seconds).

"200" (200msec): The duration (delay time) is 200 milliseconds (0.2 seconds).

"300" (300msec): The duration (delay time) is 300 milliseconds (0.3 seconds).

"400" (400msec): The duration (delay time) is 400 milliseconds (0.4 seconds).

"500" (500msec): The duration (delay time) is 500 milliseconds (0.5 seconds).

3 Press the SET key.

The flashing stops and the selection of the duration (delay time) finishes.

Selecting whether to accept the command from the unit's front panel, 37-pin parallel remote signal connector and 8-pin parallel remote signal connector in remote mode — "LocAL" (LOCAL)
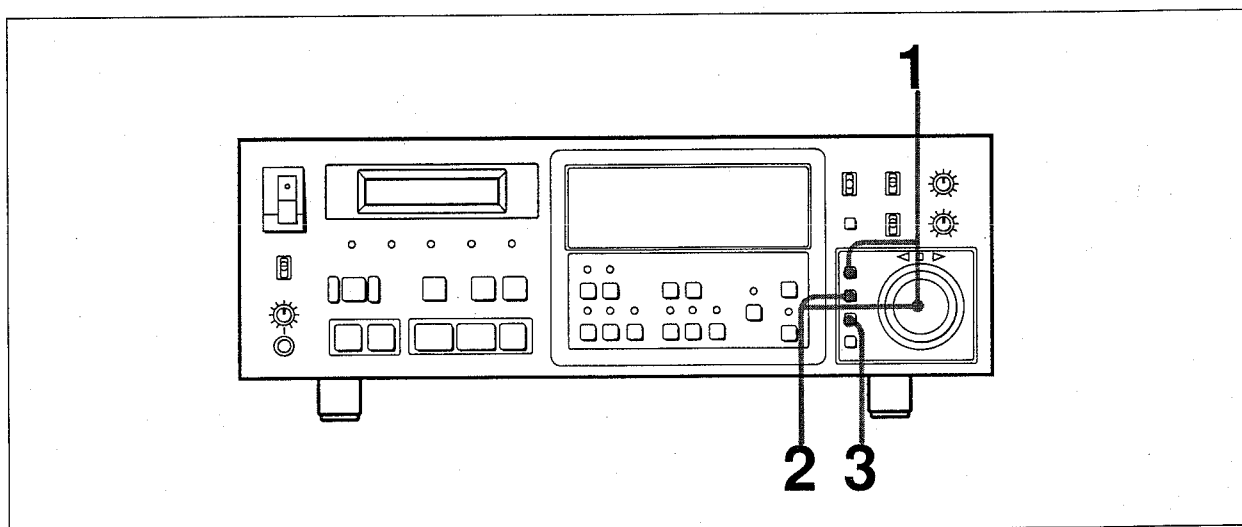
Selects whether to accept the command from the unit's front panel, 37-pin parallel remote signal connector and 8-pin parallel remote signal connector in remote mode.

The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the system is "oPEn" (OPEN)

Factory-set position: "disAbLE" (DISABLE)

Selecting whether to accept the command from the keys of the unit, 37-pin parallel remote signal connector or 8-pin parallel remote signal connector

1 Turn the search dial while holding down the MENU key and set the display to "LocAL".

The unit enters the mode for selecting whether to accept the command from the unit's key panel, 37-pin parallel remote signal connector or 8-pin parallel remote signal connector.

2 Turn the search dial while holding the DATA key down.

"**diSAbLe**" (**DISABLE**): For details, see the following table.

"**EnAbLE**" (**ENABLE**): The unit accepts commands from the unit's key panel (other than SPOT ERASE key), 37-pin parallel remote signal connector and 8-pin parallel remote signal connector.

Mode setting and acceptable key operation and commands

REMOTE/LOCAL switch	Setup menu "LocAL"	Keys	37-pin parallel remote	8-pin parallel remote	RS-232C remote	9-pin remote
LOCAL	—	○	○	○	○	Sense command
REMOTE	disAbLE	• STOP EJECT • Input gain • Upper limit of the input gain • Cross fading time • Setup menu	STOP	STOP	• STOP • EJECT • Input gain • Setup menu • Sense command	○
	EnAbLE	Keys other than SPOT ERASE key	○	○	Same as above	○

○: The unit accepts all commands.

3 Press the SET key.

The display stops flashing and selection of whether to accept commands from the unit's key panel, 37-pin remote signal connector and 8-pin remote signal connector terminates.
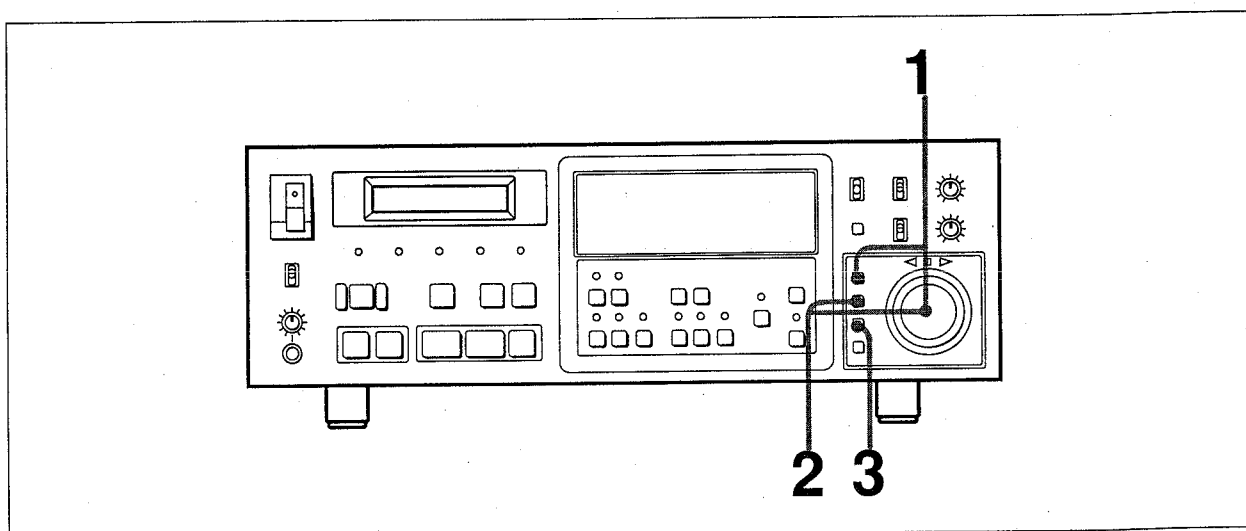
Selecting whether to accept the command from the INPUT MONITOR key when playing back in local mode — "inPut-S" (INPUT SWITCH)

You can select whether to accept the command from the INPUT MONITOR key (ENABLE) or not (DISABLE) when playing back in local mode. This setting will prevent misoperations during on-air. The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "EnAbLE" (ENABLE)

Selecting whether to accept the command from the INPUT MONITOR key when playback in local mode

1 Turn the search dial while holding the MENU key down and set the display to "inPut-S".
The unit enters the selecting mode of whether to accept the command from the INPUT MONITOR key when played back in local mode.

2 Turn the search dial while holding the DATA key down to select whether to accept the command from the INPUT MONITOR key. By turning the search dial, the indicator flashing changes as follows.

"diSAbLE" (DISABLE): The unit doesn't accept the command from the INPUT MONITOR key when playing back in local mode.

"EnAbLE" (ENABLE): The unit accepts the command from the INPUT MONITOR key when playing back in local mode.

"Auto" (AUTO): The unit does not accept commands from the INPUT MONITOR key when playing back under the control of 8-pin parallel signal remote connector.

3 Press the SET key.

The flashing stops and the selection of whether or not to accept the command from the INPUT MONITOR key when playing back in local mode is complete.

Selecting whether to accept the command from the tape transport control keys when playing back in the local mode — "PAnEL-S" (PANEL SWITCH)
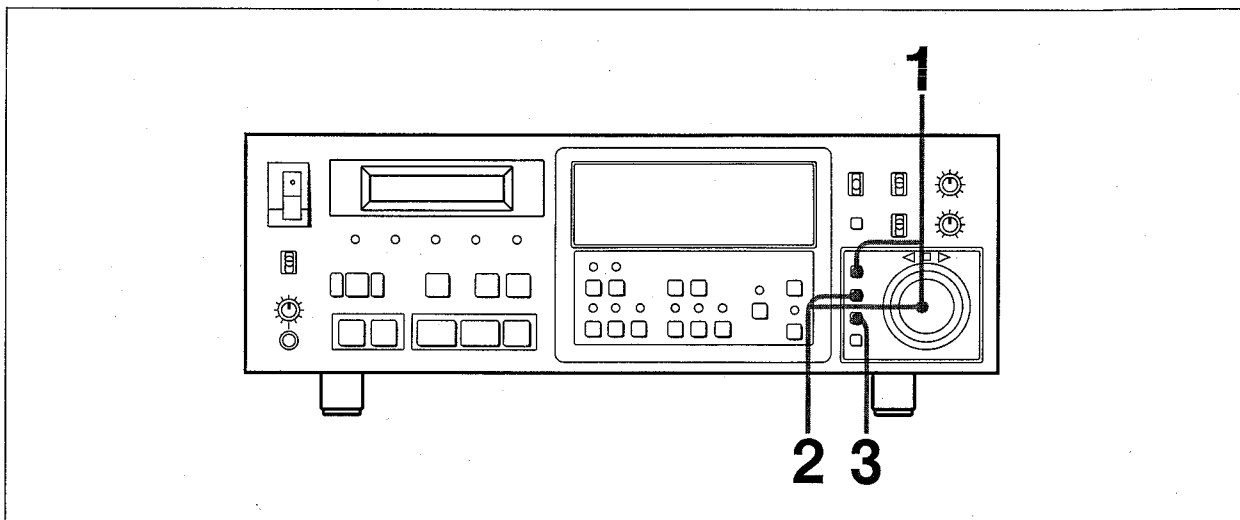
Selects whether to accept the command from the tape transport control keys on the front pannel (ENABLE) or not (DISABLE) when playing back in the local mode. This setting will prevent misoperations while operating the fader controller.

The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the system is "oPEn" (OPEN).

Factory-set position: "EnAbLE" (ENABLE)

Selecting whether to accept the command from the tape transport control keys when playing back in the local mode

1 Turn the search dial while holding the MENU key down and set the display to "PAnEL-S". The unit enters the selecting mode of whether or not to accept the command from the tape transport control keys.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "diSAbLE" to "EnAbLE".

> **"diSAbLE" (DISABLE):** The unit doesn't accept the command from the tape transport control keys when playing back in the local mode.
>
> **"EnAbLE" (ENABLE):** The unit accepts the command from the tape transport control keys when playing back in the local mode.
>
> **"Auto" (AUTO):** The unit does not accept commands from the tape transport control keys when playing back under the control of 8-pin parallel signal remote connector.

3 Press the SET key.
The flashing stops and the selection of whether or not to accept the command from the tape transport control keys when playing back in the local mode is finished.
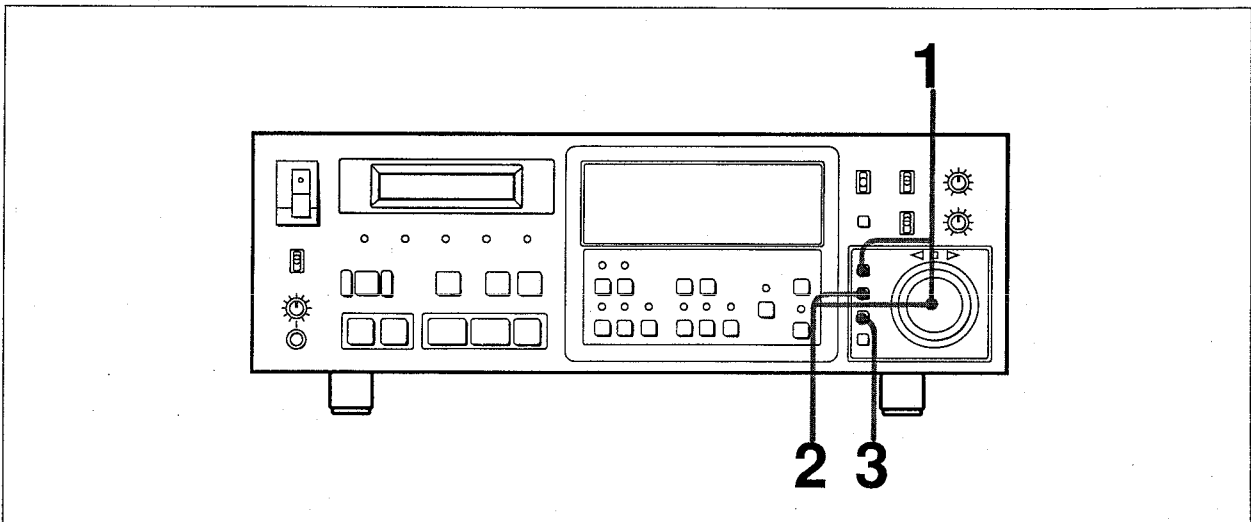
Selecting whether to shift the mode to STOP mode or PLAY mode after exiting the cue mode by pressing the CUE key during cue mode — "AFtr cuE" (AFTER CUE)

You can select whether to shift the mode to STOP mode (STOP) or PLAY mode (PLAY) after exiting the cue mode.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED).
• the setup menu selection for the system is "oPEn" (OPEN).
Factory-set position: "StoP" (STOP)

Selecting whether to shift the mode to STOP mode or PLAY mode after exiting the cue mode

1 Turn the search dial while holding the MENU key down and set the display to "AFtr cuE".
The unit enters the selecting mode of whether to shift the mode to STOP mode or PLAY mode after exiting the cue mode. Do this by pressing the CUE key during cue mode.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "StoP" to "PLAY".

    "StoP" (STOP): The unit shifts to STOP mode after exiting the cue mode. Do this by pressing the CUE key during cue mode.

    "PLAY": The unit shifts to PLAY mode after exiting the cue mode. Do this by pressing the CUE key during cue mode.

3 Press the SET key.
The flashing stops and the selection of whether to shift the mode to STOP mode or PLAY mode after exiting the cue mode is complete.
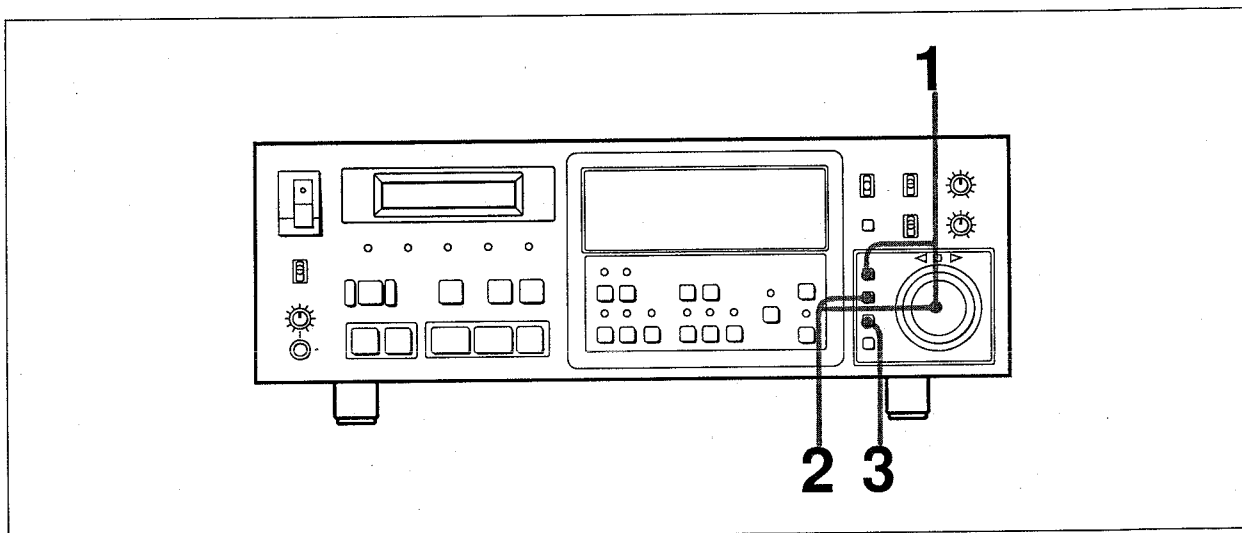
Selecting recording mode to be set at power-on — "rEC dFLt" (REC MODE DEFAULT)

Selects the recording mode to be automatically set at power-on.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED)
• the setup menu selection for the system is "oPEn" (OPEN)
Factory-set position: "SAFE" (SAFE)

Selecting the recording mode set at power-on

1 Turn the search dial while holding down the MENU key and set the display to "rEC dFLt".
The unit enters the mode for selecting the recording mode to be automatically set at power-on.

2 Turn the search dial while holding the DATA key down to select the recording mode to be set at power-on.
By turning the search dial, the indicator changes as follows.
  "SAFE" (SAFE): Master safe mode (no recording mode is selected. In this mode, the unit cannot record.
  "ASS" (ASSEMBLE): Assemble mode
  "Audio" (AUDIO INSERT): Audio insert mode
  "Sub" (SUB INSERT): Subcode insert mode

3 Press the SET key.
The display stops flashing and selection of the recording mode to be set terminates.

Note

When you turn the power on while a cassette with its tab hole open is loaded, the unit automatically enters master safe mode, regardless of the above setting.

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Selecting the setup menu level for the display — "[SEt dSP]" (SETUP MENU for DISPLAY)

Selects the setup menu level for the display, that is, whether to open the setup menu for the display (OPEN) or not (CLOSE).
The setting is saved when you turn the power off.

This function is available when: the setup menu selection is "EnHAncEd" (ENHANCED).
Factory-set position: "cLoSE" (CLOSE)
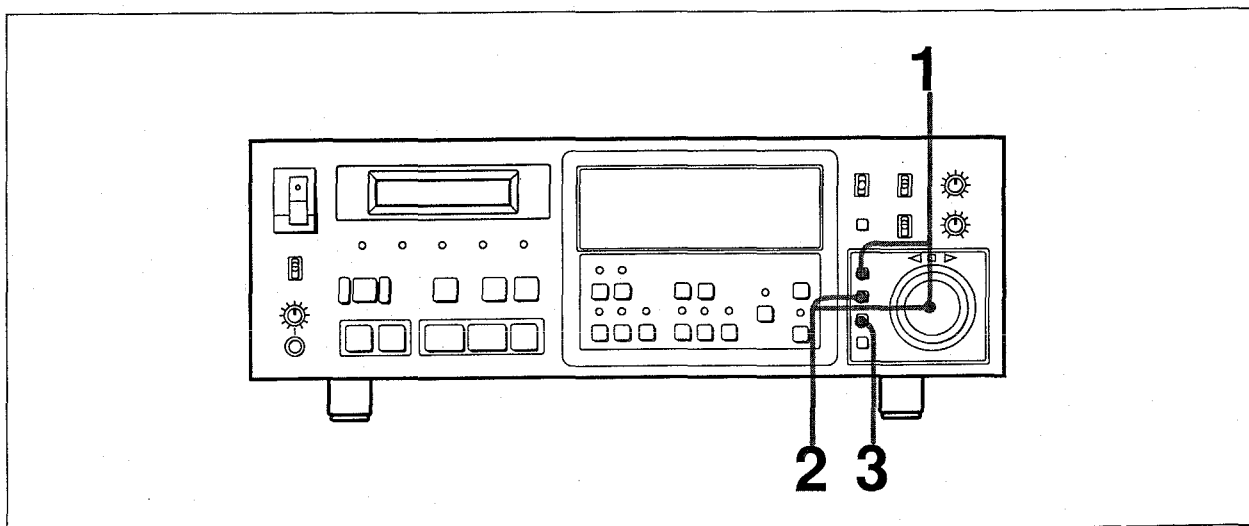
Selecting the setup menu level for the display

1 Turn the search dial while holding the MENU key down and set the display to "[SEt dSP]".
The unit enters the selection mode of the setup menu for the display.

2 Turn the search dial while holding the DATA key down to select the setup menu level for the display.
By turning the search dial, the indicator flashing changes from "cLoSE" to "oPEn".

"cLoSE" (CLOSE): You cannot select the setup menu for the display.

"oPEn" (OPEN): You can select the setup menu for the display.

3 Press the SET key.
The flashing stops and the selection of the setup menu level for the display finishes.
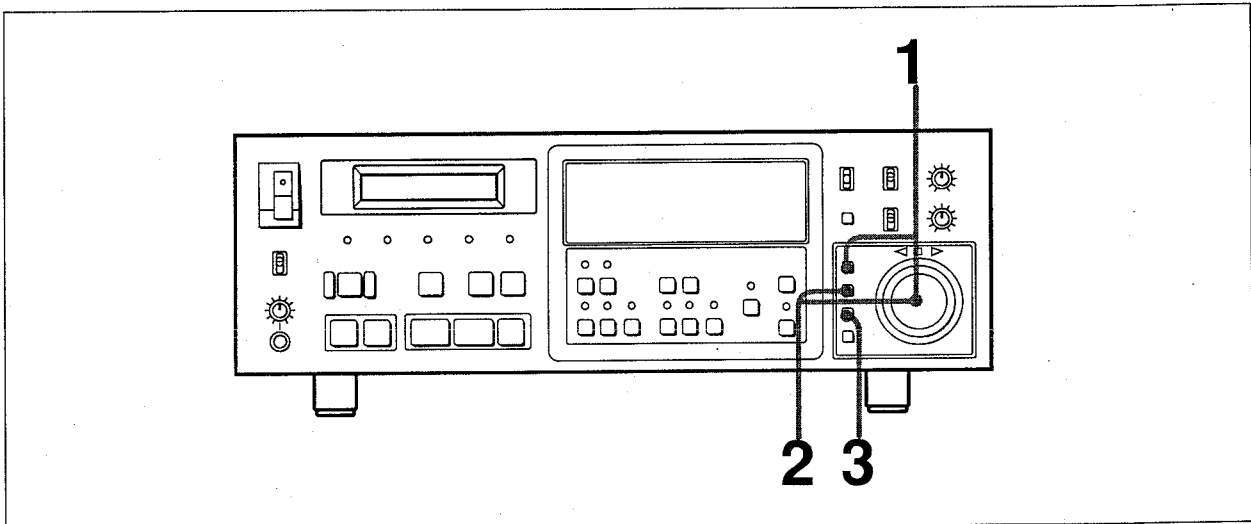
Adjusting the brightness of the display on the front panel — "FL diSP" (FL DISPLAY)

Adjusts the brightness of the display on the front panel.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the display is "oPEn" (OPEN).

Factory-set position: "d-1" (DUTY-1)

Adjusting the brightness of the display on the front panel

1 Turn the search dial while holding the MENU key down and set the display to "FL diSP".
The unit enters the brightness adjusting mode for the display on the front.

2 Turn the search dial while holding the DATA key down to adjust the brightness of the display.
By turning the search dial, the indicator flashing changes as below.

    "d-1" (DUTY-1): a maximum bright level
    "d-2" (DUTY-2): a 2nd bright level
    "d-3" (DUTY-3): a 3rd bright level
    "d-4" (DUTY-4): a minimum bright level

3 Press the SET key.
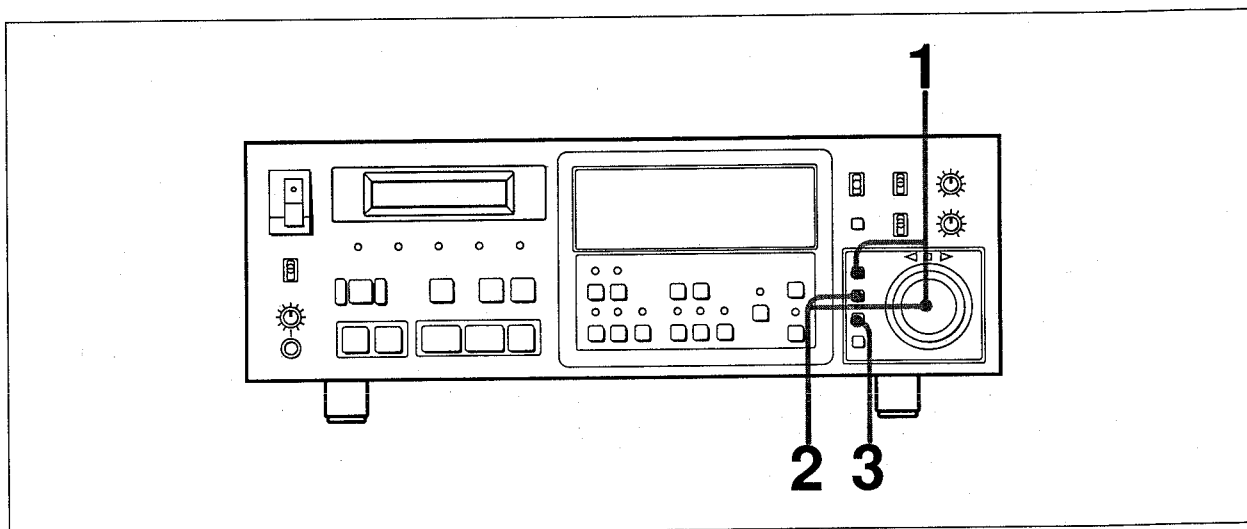The flashing stops and the setting finishes.

Selecting the level meter peak hold mode — "P-HoLd" (PEAK HOLD)

Selects the level meter peak hold mode.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the display is "oPEn" (OPEN).

Factory-set position: "Auto" (AUTO)

Selecting the level meter peak hold mode

1 Turn the search dial while holding the MENU key down and set the display to "P-HoLd".
The unit enters the selection mode of the level meter peak hold mode.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "Auto" to "HoLd".

> **"Auto" (AUTO):** The unit holds the peak level as long as the time you set in "HoLd-t" in the setup menu.
> **"HoLd" (HOLD):** The unit keeps on holding the peak level until you press EJECT key or until you press the RESET key while holding the DATA key down.

3 Press the SET key.
The flashing stops and the selection of the level meter peak hold mode is complete.

To release the peak hold
When you press the RESET key while the setting is "HoLd" (HOLD), the unit releases the holding segment indication on the level meters.
When you eject a cassette, the unit also releases the holding segment indication on the level meters.
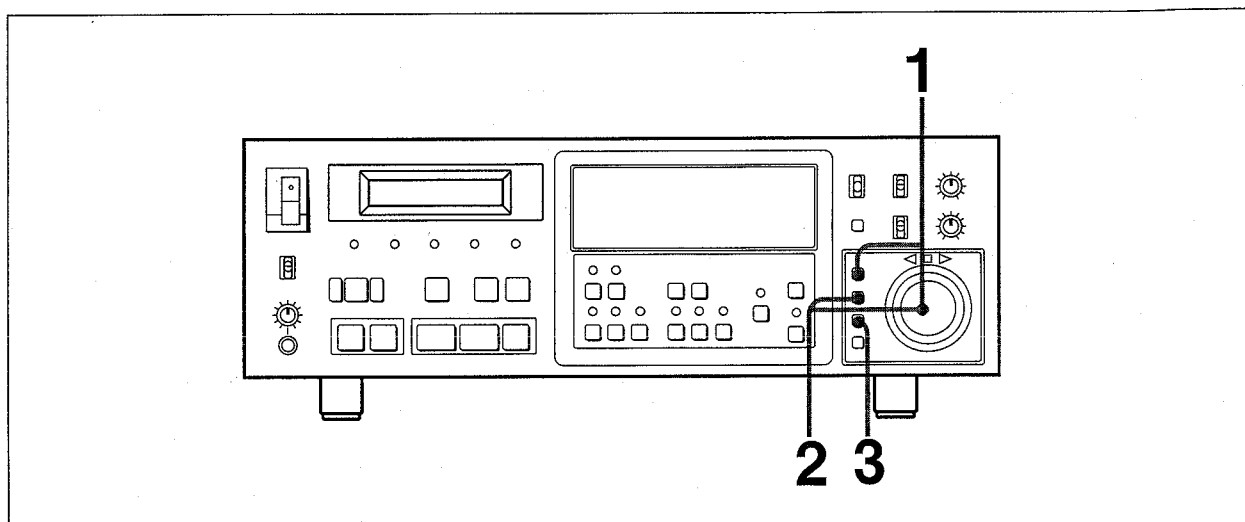
Selecting the hold mode for the "OVER" segments of the level meters — "o-HoLd" (OVER HOLD)

Selects the hold mode for the "OVER" segments of the level meters. The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the display is "oPEn" (OPEN).
Factory-set position: "on" (ON)

Selecting the hold mode for the "OVER" segments of the level meters

1 Turn the search dial while holding the MENU key down and set the display to "o-HoLd".
The unit enters the selection mode of the hold mode for the "OVER" segments of the level meters.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes from "oFF" to "on".
　"oFF" (OFF): The segments are not held to light.
　"on" (ON): The segments are held to light according to the peak hold mode setting by "P-HoLd" (PEAK HOLD).

3 Press the SET key.
The flashing stops and the selection of the hold mode for the "OVER" segment of the level meters finishes.
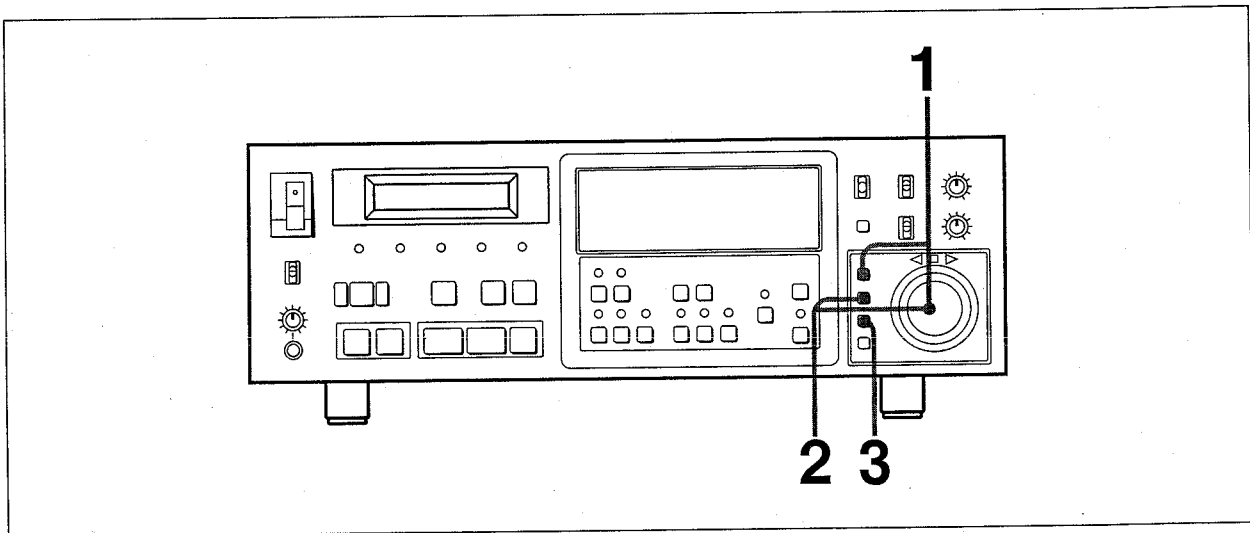
Selecting the peak level hold time of the level meters — "HoLd-t" (HOLD TIME)

Selects the peak level hold time of the level meters.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the display is "oPEn" (OPEN).

Factory-set position: "1_5" (1.5 seconds)

Selecting the peak level hold time of the level meters

1 Turn the search dial while holding the MENU key down and set the display to "HoLd-t".
The unit enters the selection mode of the peak level hold time of the level meters.

2 Turn the search dial while holding the DATA key down to select the peak level hold time of the level meters.
By turning the search dial, the indicator flashing changes from "1_5" to "4_0".

   "1_5" (1.5 seconds): The peak level hold time is set to 1.5 seconds.

   "4_0" (4.0 seconds): The peak level hold time is set to 4.0 seconds.

3 Press the SET key.
The flashing stops and the selection of the peak hold time of the level meters finishes.
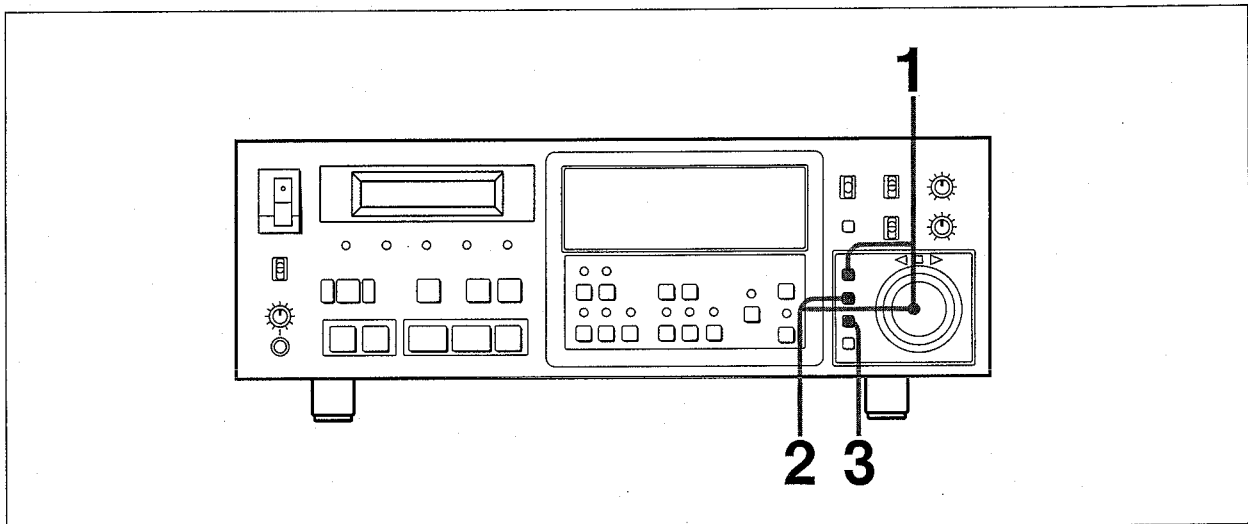
Selecting the release time for the level meters — "rLS-t" (RELEASE TIME)

Selects the release time for the level meters.
The setting is saved when you turn the power off.

This function is available when:
* the setup menu selection is "EnHAncEd" (ENHANCED).
* the setup menu selection for the display is "oPEn" (OPEN).
Factory-set position: "50" (50 milliseconds)

Selecting the release time for the level meters

1 Turn the search dial while holding the MENU key down and set the display to "rLS-t".
The unit enters the selection mode of the release time for the level meters.

2 Turn the search dial while holding the DATA key down to select the release time for the level meters.
By turning the search dial, the indicator flashing changes from "50" to "100".
> **"50" (50 milliseconds):** The release time is set to 50 milliseconds (0.05 seconds).
> **"100" (100 milliseconds):** The release time is set to 100 milliseconds (0.1 seconds).

3 Press the SET key.
The flashing stops and the selection of the release time for the level meters finishes.

Selecting the level detection sensitivity that lights the "OVER" segments of the level meters — "o-SEnS" (OVER LEVEL SENSITIVITY)
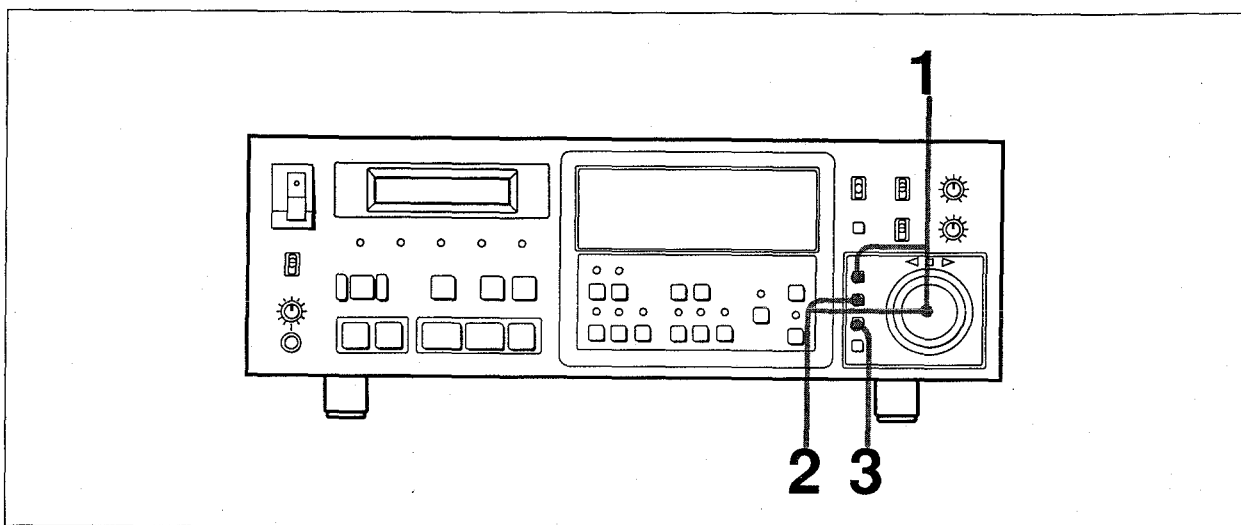
Selects the level detection sensitivity that lights the "OVER" segments of the level meters.
The setting is saved when you turn the power off.

This function is available when:
* the setup menu selection is "EnHAncEd" (ENHANCED).
* the setup menu selection for the display is "oPEn" (OPEN).
Factory-set position: "4" (4-word)

Selecting the level detection sensitivity that lights the "OVER" segments of the level meters

1 Turn the search dial while holding the MENU key down and set the display to "o-SEnS".
The unit enters the selection mode of the level detection sensitivity that lights the "OVER" segments of the level meters.

2 Turn the search dial while holding the DATA key down.
By turning the search dial, the indicator flashing changes as below.
- **"1" (1-word):** The level detection sensitivity is 1 word.
- **"2" (2-word):** The level detection sensitivity is 2 words.
- **"3" (3-word):** The level detection sensitivity is 3 words.
- **"4" (4-word):** The level detection sensitivity is 4 words.
- **"5" (5-word):** The level detection sensitivity is 5 words.
- **"6" (6-word):** The level detection sensitivity is 6 words.
- **"7" (7-word):** The level detection sensitivity is 7 words.

3 Press the SET key.
The flashing stops and the selection of the level detection sensitivity that lights the "OVER" segments of the level meters finishes.
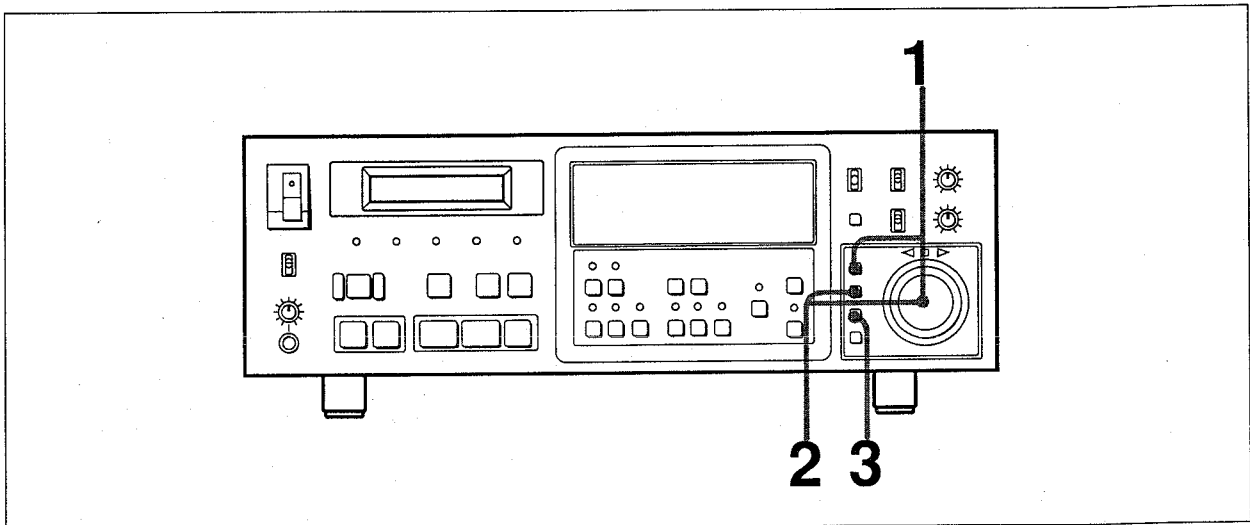
Selecting the setup menu level for signal processing — "[SEt SP]" (SET UP MENU for SIGNAL PROCESSING)

Selects whether to open or close the menu for signal processing in the setup menu.
The setting is saved when you turn the power off.

This function is available when: the setup menu selection is "EnHAncEd" (ENHANCED)
Factory-set position: "cLoSE" (CLOSE)

Opening or closing the setup menu for signal processing

1 Turn the search dial while holding down the MENU key and set the display to "[SEt dSP]".
The unit enters the mode for the setup menu for signal processing.

2 Turn the search dial while holding the DATA key down to select the level of the setup menu for signal processing.
By turning the search dial, the indicator changes from "cLoSE" to "oPEn".
   "cLoSE" (CLOSE): You cannot select the setup menu for the signal processing.
   "oPEn" (OPEN): You can select the setup menu for the signal processing.

3 Press the SET key.
The display stops flashing and selection of the setup menu level for signal processing terminates.

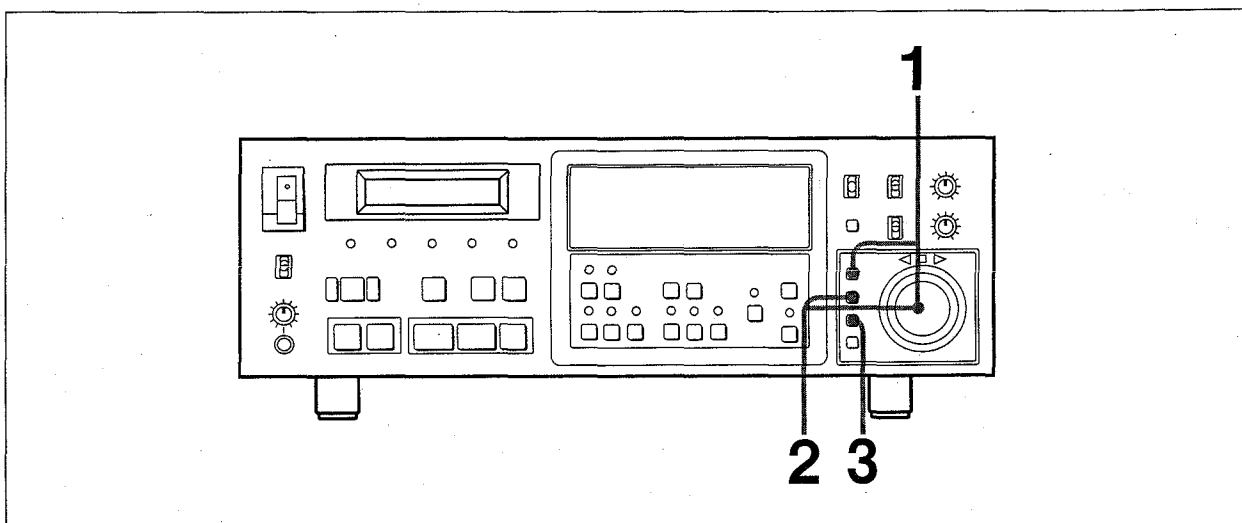## Selecting the state that turns on the PB CONDITION indicator — "Pb cond" (PB CONDITION)

Selects the state that turns on the PB CONDITION indicator on the front panel.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED).
- the setup menu selection for the signal processing is "oPEn" (OPEN).

Factory-set position: "bad cond" (BAD CONDITION)

Selecting the state that turns on the PB CONDITION indicators

1 Turn the search dial while holding the MENU key down and set the display to "Pb cond".
The unit enters the selection mode for the state that turns on the PB CONDITION indicator.

2 Turn the search dial while holding the DATA key down to select the condition that turns the PB CONDITION indicator.
By turning the search dial, the indicator flashing changes as follows:

"bAd cond" (BAD CONDITION): Lights if the error rate worsens and interpolation or muting might occur.

"corr" (CORRECTION): Lights when an error occurs and a correction is made.

"intP" (INTERPOLATION): Lights when an error occurs and interpolation is done.

3 Press the SET key.
The flashing stops and the selection of the state that turns on the PB CONDITION indicator is finished.

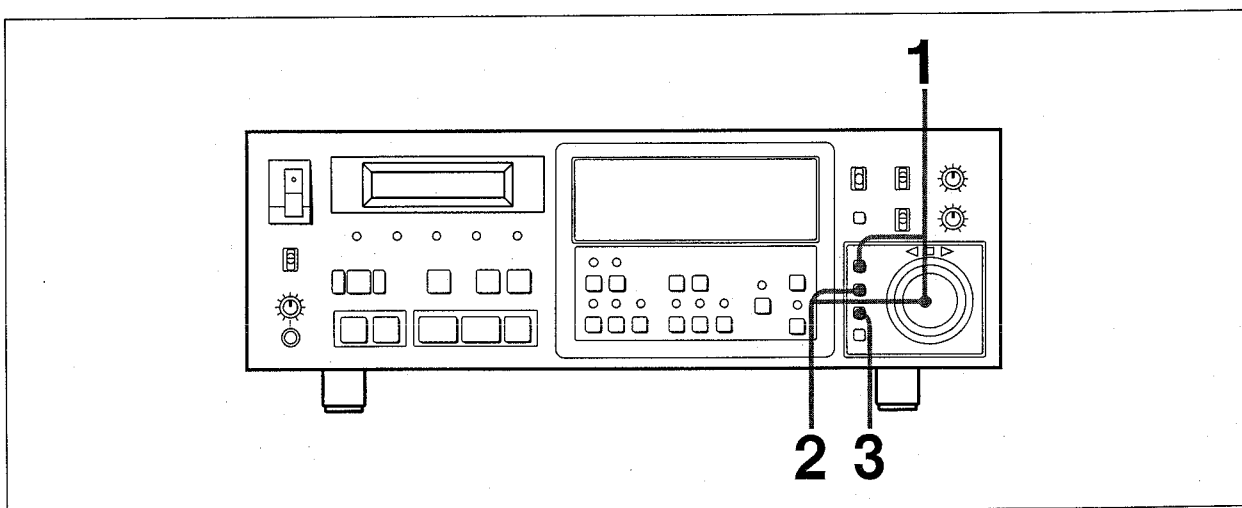## Selecting hold mode of the MUTE indicator and PB CONDITION indicator — "E-HoLd" (ERROR HOLD)

Selects hold mode of the MUTE indicator and PB CONDITION indicator on the front panel.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the signal processing is "oPEn" (OPEN)

Factory-set position: "oFF" (OFF)

Selecting hold mode of the MUTE indicator and PB CONDITION indicator

1 Turn the search dial while holding down the MENU key and set the display to "E-Hold".
The unit enters the mode for selecting the hold mode of the MUTE and PB CONDITION indicators.

2 Turn the search dial while holding the DATA key down to hold the lit status of the MUTE and PB CONDITION indicators.
As you turn the search dial, the indicator changes from "oFF" to "on".

"oFF" (OFF): The unit does not hold the MUTE and PB CONDITION indicators' lit status.
"on" (ON): The unit hold the MUTE and PB CONDITION indicators' lit status. However, the unit does not hold the PB CONDITION indicator lit status when the PB CONDITION indicator status is set to "corr" (CORRECTION) from the "Pb cond" setup menu.

3 Press the SET key.
The display stops flashing and selection of the hold mode of the MUTE and PB CONDITION indicators' status terminates.

To release hold mode
Press the RESET key. Also, this mode is released when you eject the cassette.

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Selecting whether to perform the muting when the error rate increases — "E-trSHLd" (ERROR THRESHOLD)

The unit is constantly monitoring the error rate during playback and during recording in monitor recording mode. You can select whether to make the unit perform muting when the error rate increases.
The setting is saved when you turn the power off.

This function is available when:
• the setup menu selection is "EnHAncEd" (ENHANCED)
• the setup menu selection for the signal processing is "oPEn" (OPEN)
Factory-set position: "nor" (NORMAL)
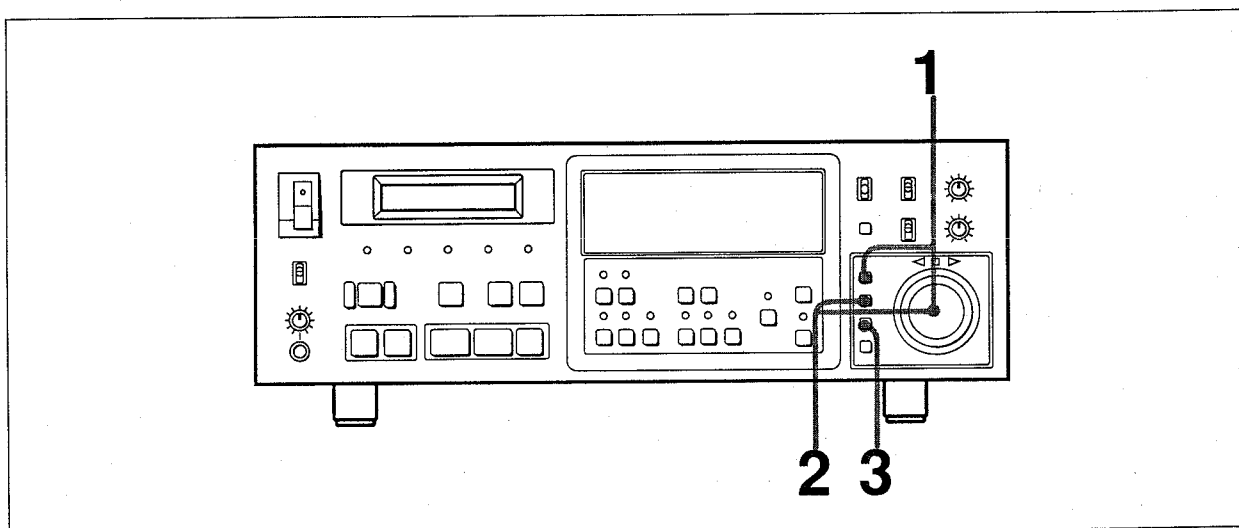
Selecting muting

1 Turn the search dial while holding down the MENU key and set the display to "E-trSHLd".
The unit enters the mode for selecting whether to perform muting.

2 Turn the search dial while holding the DATA key down to select whether to perform muting when the error rate increases.
By turning the search dial, the indicator changes from "nor" to "HiGH".

> **"nor" (NORMAL):** The unit performs muting process when the error rate increases.

> **"HiGH" (HIGH):** The unit does not perform muting process even if the error rate increases.

3 Press the SET key.
The display stops flashing and selection of muting in response to a high error rate terminates.

Note

Muting may occur easily at those points where tracks are not connected. Thus, when you perform continuous-recording in assemble mode, perform the following procedure so as not to form discontinued points in the tracks.

• Set the setup menu of "rLb StoP" to "on", or
• start recording once the servo lamp lights after playback.

Selecting the setup menu level for the editor — "[SEt ed]" (SET UP MENU for EDITOR)

Selects whether to open or close the menu for the editor in the setup menu.
The setting is saved when you turn the power off.

This function is available when: the setup menu selection is "EnHAncEd" (ENHANCED)
Factory-set position: "cLoSE" (CLOSE)
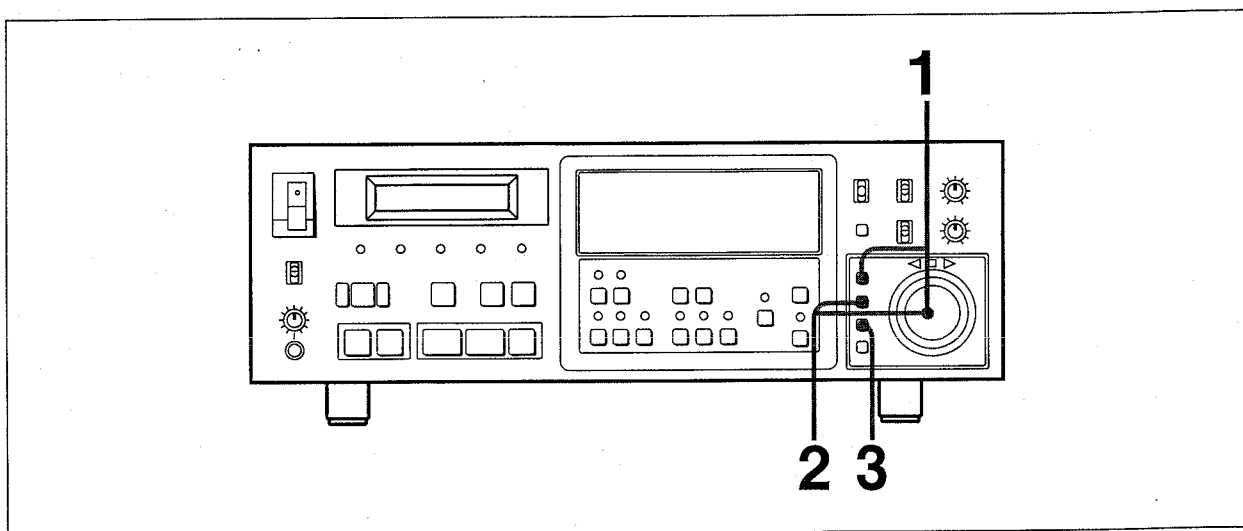
Opening or closing the setup menu for the remote control

1 Turn the search dial while holding down the MENU key and set the display to "[SEt ed]". ·
The unit enters the mode for the setup menu for the editor.

2 Turn the search dial while holding the DATA key down to select the level of the setup menu for the editor.
As you turn the search dial, the indicator changes from "cLoSE" to "oPEn".

> **"cLoSE" (CLOSE):** You cannot select the setup menu for the editor.
> **"oPEn" (OPEN):** You can select the setup menu for the editor.

3 Press the SET key.
The display stops flashing and selection of the setup menu level for the editor terminates.

Selecting whether to loop at the end of the sound stored in memory at memory jog — "JoG LooP" (JOG LOOPING)

Selects whether to continue jog looping at the end of the sound stored in memory during memory jog, or to stop memory jog at either end of the sound in memory and perform muting.
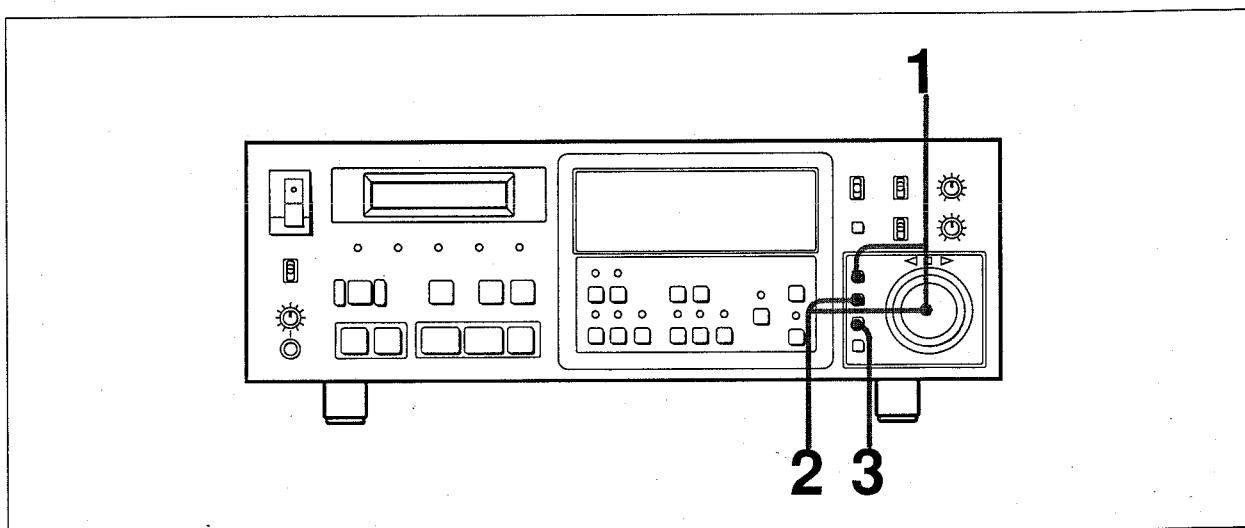
For the PCM-7030, this function is effective only when the optional DABK-7032 board is installed.

The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the editor: "oPEn" (OPEN)

Factory-set position: "diSAbLE" (DISABLE)

Selecting whether to continue jog looping at the end of the sound stored in memory

1 Turn the search dial while holding down the MENU key and set the display to "JoG LooP".
The unit enters the mode for selecting whether to continue jog looping at memory jog.

2 Turn the search dial while holding the DATA key down to select whether to continue jog looping.
By turning the search dial, the indicator changes from "diSAbLe" to "EnAbLE".

> **"diSAbLe" (DISABLE):** The unit stops jog at either end of the sound in memory.
>
> **"EnAbLE" (ENABLE):** The unit continues jog looping without stopping at the end.

3 Press the SET key.
The display stops flashing and selection of audio looping mode at memory jog terminates.

5-98

Selecting memory mode at memory start — "StArt" (START)

Selects whether to use the sound memory (about three seconds) for finding the precise start point by using the memory jog function. When the sound memory is used for the precise start point using memory jog, you cannot use the memory start function. However, this function is effective for determining the edit point precisely by using memory jog from the editor or determining the time code of the audio signal precisely.

For the PCM-7030, this function is effective only when the optional DABK-7032 board is installed.

The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the editor is "oPEn" (OPEN)

Factory-set position: "StArt" (START)
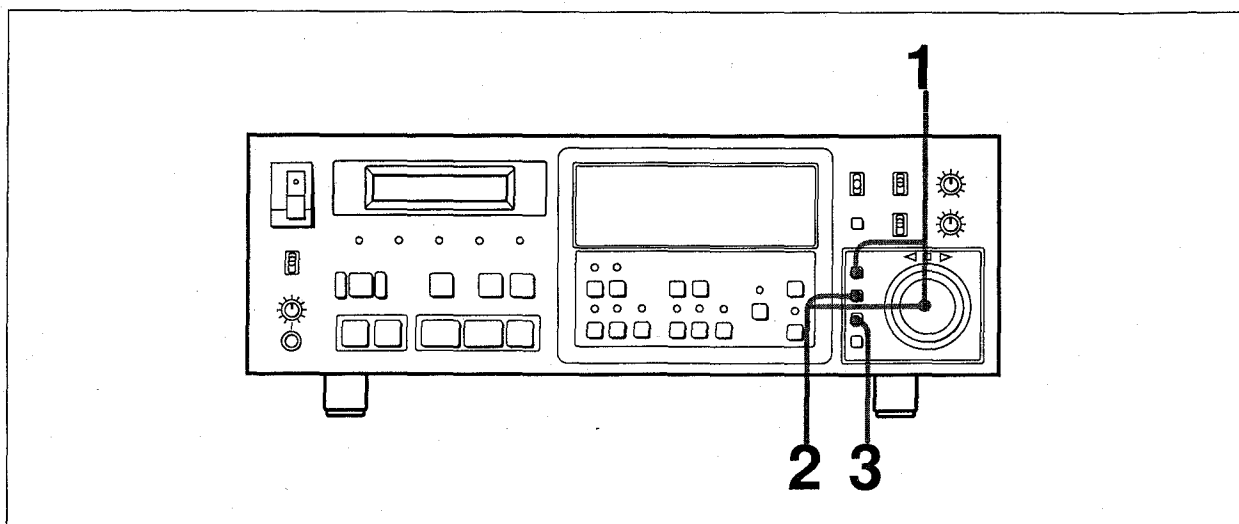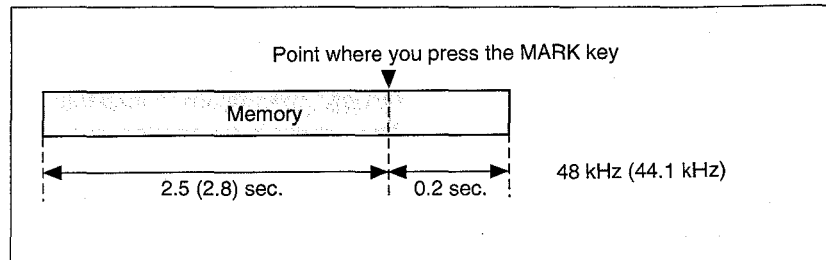

Selecting the memory mode for memory start

1 Turn the search dial while holding down the MENU key and set the display to "StArt".

The unit enters the mode for selecting the memory mode.

**2** Turn the search dial while holding down the DATA key to select the sound memory mode.

By turning the search dial, the indicator changes as follows.

"StART" (START): Sound memory is used for memory start.

"Edit-E" (EDIT, END): The unit cannot perform memory start. The relation between the position at which you press the MARK key and memory is as follows.

"Edit-C" (EDIT, CENTER): The unit cannot perform memory start. The relation between the position at which you press the MARK key and memory is as follows.
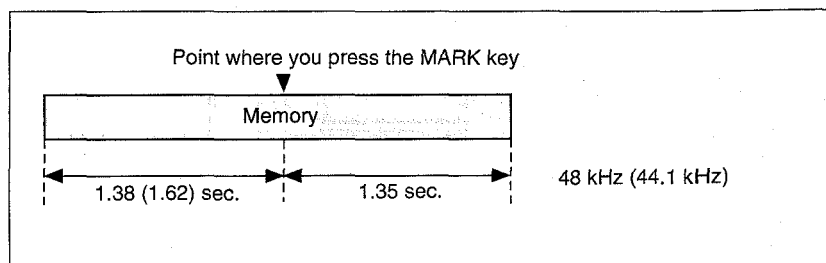
3 Press the SET key.

The display stops flashing and selection of memory mode terminates.

Selecting memory jog control from a video editor other than the BVE-910/9100, RM-D7300 and DAE-3000 — "JoG ctL" (JOG CONTROL)

Selects whether the unit performs memory jog from an editor other than the BVE-910/9100, RM-D7300 and DAE-3000.
For the PCM-7030, this function is effective only when the optional DABK-7032 board is installed.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the editor is "oPEn" (OPEN)
Factory-set position: "oFF" (OFF)
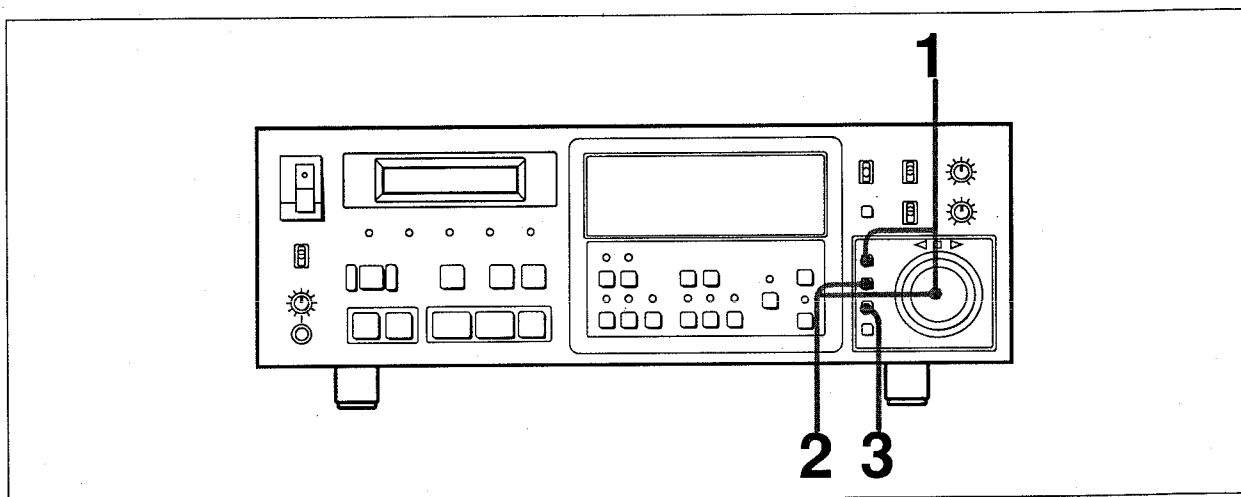
Selecting memory jog control from a video editor other than the BVE-910/9100, RM-D7300 and DAE-3000

1 Turn the search dial while holding down the MENU key and set the display to "Jog ctL".
The unit enters the mode for selecting the memory jog control mode.

2 Turn the search dial while holding the DATA key down to select whether the editor or the unit performs memory jog control.
As you turn the search dial, the indicator changes from "oFF" to "on".
"oFF" (OFF): The unit performs memory jog under control of the editor. Select this setting when you are using the RM-D7300, DAE-3000 or BVE-910/9100 (all of which can control memory jog).
"on" (ON): The unit performs memory jog control (when the unit is connected to an editor that cannot control memory jog).

3 Press the SET key.
The display stops flashing and selection of the unit to perform memory jog control terminates.

Note

Select "oFF" when the RM-D7300 or DAE-3000 digital audio editor is connected.

5-101

Selecting whether the first edit is performed from a BVE series video editor — "1St Edit" (FIRST EDIT)
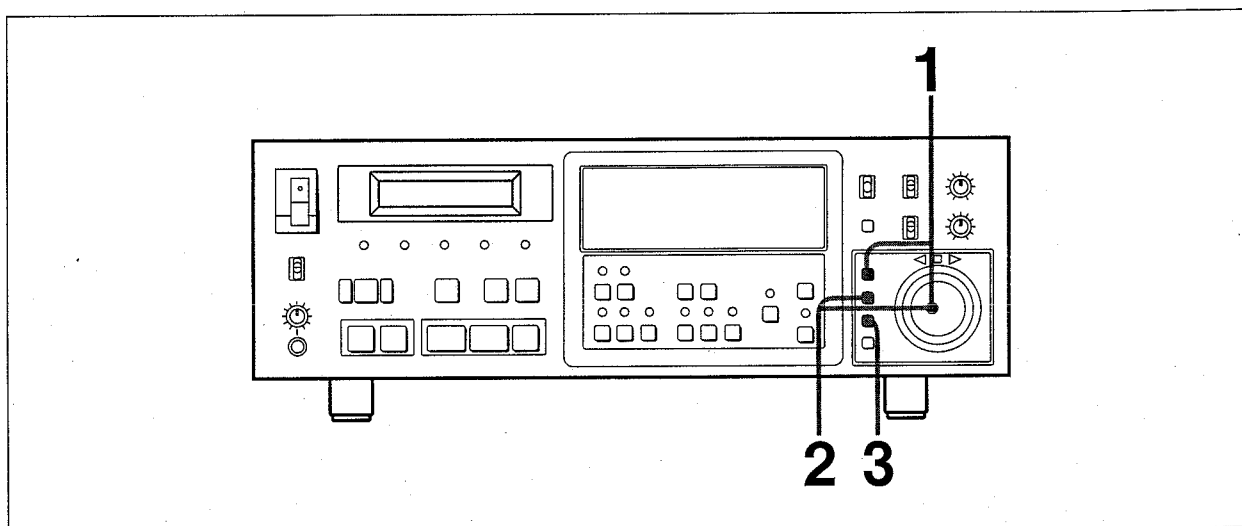
Selects whether the first edit is performed from a BVE series video editor.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the editor is "oPEn" (OPEN)

Factory-set position: "oFF" (OFF)

Selecting whether a first edit is performed from a BVE series video editor

1 Turn the search dial while holding down the MENU key and set the display to "1St Edit".
The unit enters the mode for selecting whether a first edit is performed from a BVE series video editor.

2 Turn the search dial while holding the DATA key down to select whether a first edit is performed from a BVE series video editor. By turning the search dial, the indicator changes from "oFF" to "on".

> **"oFF" (OFF):** A first edit is not performed. Select this position when the unit is connected to the RM-D7300 or DAE-3000 digital audio editor.
> **"on" (ON):** A first edit is performed when a blank tape is used.

3 Press the SET key.
The display stops flashing and selection of whether a first edit is performed from the BVE series video editor terminates.

- When you are using a previously recorded tape, you cannot record from the set time code (IN POINT - (preroll time + 10 seconds)). Use the blank tape.
- Select "oFF" when the RM-D7300 or DAE-3000 digital audio editor is connected.

Selecting whether to send the TIME CODE MISSING message upon receiving the CURRENT TIME SENSE command — "tc rtn" (TIME CODE RETURN)

Selects whether to send the TIME CODE MISSING message upon receiving the CURRENT TIME SENSE command of 9-pin serial remote signal connector.
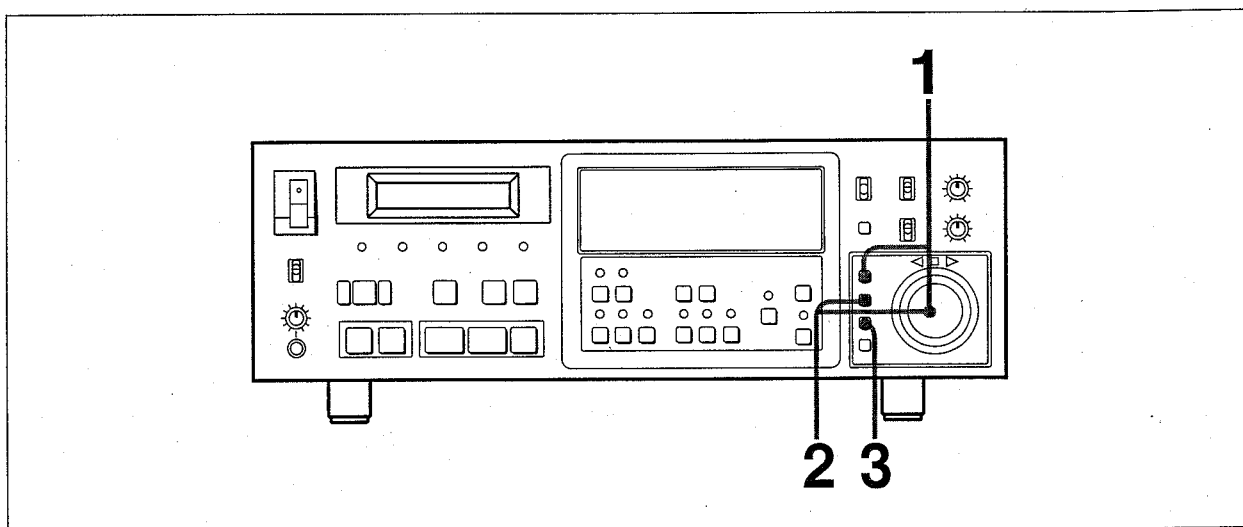
Note

There may be cases where the system does not operate correctly depending on the equipment connected when the TIME CODE MISSING message is returned.
The setting is saved when you turn the power off.

This function is available when:
- the setup menu selection is "EnHAncEd" (ENHANCED)
- the setup menu selection for the editor is "oPEn" (OPEN)

Factory-set position: "oFF" (OFF)

Selecting whether to send the TIME CODE MISSING message upon receiving the CURRENT TIME SENSE command

1 Turn the search dial while holding down the MENU key and set the display to "tc rtn".
The unit enters the mode for selecting whether to send back the TIME CODE MISSING message.

2 Turn the search dial while holding the DATA key down to select whether to send back the TIME CODE MISSING message.
By turning the search dial, the indicator changes from "oFF" to "on".

"oFF" (OFF): The unit does not send back the TIME CODE MISSING message.

"on" (ON): The unit sends back the TIME CODE MISSING message.

3 Press the SET key.
The display stops flashing and selection of whether to send back the TIME CODE MISSING message terminates.

Notes

- When the BVE-800 is connected, select "oFF".
- When the RM-D7300 digital audio editor is connected, select "on". If "oFF" is selected, the TIME CODE lamp lights when you play back a blank tape or you eject a tape.

Chapter 6. Application Systems

This chapter explains you how to configure and use systems capable of copying/editing. The equipment that can be connected to the PCM-7050/7030 to configure such systems ranges from digital audio equipment and digital VTRs to video editors and digital audio editors. Though the systems introduced in this chapter represent only a small portion of many possible system configurations, they, in addition to the system shown in Chapter 1, should be regarded as basic configurations for not only copying/editing, but many other applications.

Most of the systems introduced in this chapter are capable of digital copying. This chapter will describe how to connect the PCM-7050/7030 with other equipment to make up such systems and will give the precautions to be taken in using the systems.

The equipment connected to the PCM-7050/7030 in the systems introduced in this chapter include the following:
- PCM-1630 Digital Audio Processor system
- PCM-3402 Digital Audio Recorder
- PCM-3324A or PCM-3348 Digital Audio Recorder
- Digital VTR (complying with the D-1 or D-2 format)
- BVH-2800 series 1-inch VTR
- Analog VTR
- Analog audio tape recorder
- BVE-9100/9000/910/900/800/600 Video Editor
- DAE-3000 Digital Audio Editor

The components of the systems introduced also include some optional equipment and accessories.

Abbreviation used in this chapter
The following abbreviated expression may be used for simplicity.
- AES/EBU digital signal or AES/EBU D-I sync signal (digital audio signal or D-I sync signal in the AES/EBU format)

6-2. Systems with Copying Capability and Their Applications

This section describes systems with mainly digital copying capability, their applications and connections, relevant precautions, and problems caused by operation under improper conditions.

6-2-1. Digital Copying between PCM-7050/7030 and PCM-1630 Digital Audio Processor System

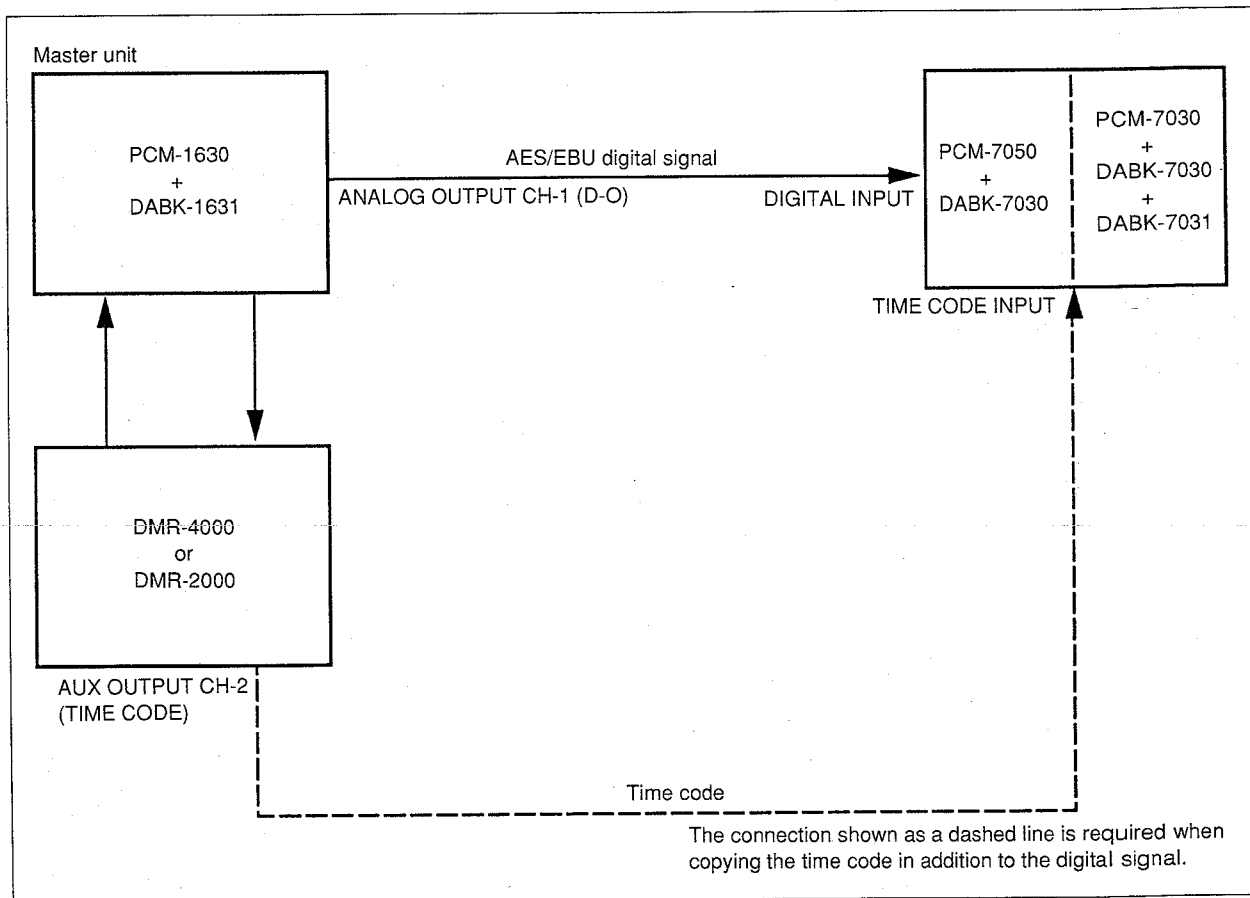The PCM-1630 digital audio processor system consists of the following equipment:

- PCM-1630 digital audio processor
- DMR-4000 or DMR-2000 digital master recorder
- DABK-1631 digital I/O option

Digital copying from PCM-1630 digital audio processor system to PCM-7050/7030

Applications

Copying a master tape used for CD production to a DAT tape as a sample for use until the CD is completed.

Connections

Master unit

```
┌─────────────────┐                                              ┌──────────┬──────────┐
│                 │                                              │          │ PCM-7030 │
│   PCM-1630      │        AES/EBU digital signal                │ PCM-7050 │    +     │
│      +          │ ───────────────────────────────────────────▶│    +     │ DABK-7030│
│   DABK-1631     │  ANALOG OUTPUT CH-1 (D-O)      DIGITAL INPUT │ DABK-7030│    +     │
│                 │                                              │          │ DABK-7031│
└──────┬──────▲───┘                                              └──────────┴──────────┘
       │      │                                                   TIME CODE INPUT ▲
       ▼      │                                                                   │
┌─────────────┴───┐                                                               │
│                 │                                                               │
│   DMR-4000      │                                                               │
│     or          │                                                               │
│   DMR-2000      │                                                               │
│                 │                                                               │
└─────────────────┘                                                               │
 AUX OUTPUT CH-2 │                                                                │
 (TIME CODE)     │                                                                │
                 │                    Time code                                   │
                 └────────────────────────────────────────────────────────────────┘
```

The connection shown as a dashed line is required when copying the time code in addition to the digital signal.

Copying from PCM-1630 system to PCM-7050/7030

6-2

Notes

- Make the PCM-1630 the master unit for system synchronization. On the PCM-7050/7030, select the external synchronization (D-I) mode to use the D-I sync signal (by setting the SYNC signal selector on the front panel to EXT and the EXT SYNC selector on the connector panel to D-I), and set the SAMPLING FREQ selector set to 44.1 kHz on its front panel.
- On the PCM-7050/7030, select the SMPTE (30 Hz) time code, non-drop frame mode.
- For the PCM-1630, use a tape for SMPTE (30 Hz) time code, non-drop frame mode, and a sampling frequency of 44.1 kHz.
- When the sampling frequency of the PCM-1630 system is 44.056 kHz, see section "4-3-2. Controlling the Recording Speed—Variable–Speed Recording" (page 4-46). In this case, for the PCM-1630, use a tape for SMPTE (29.97 Hz) time code, drop frame mode.
- PQ cue code on a master tape cannot be copied.

Problems caused when the above conditions are not met
- If the time code input to the PCM-7050/7030 does not match the corresponding setting on the PCM-7050/7030, the PCM-7050/7030 will be unable to carry out recording correctly.
- If the input sampling frequency does not match the corresponding setting on the PCM-7050/7030, the PCM-7050/7030 cannot copy the input signal.

Digital copying from PCM-7050/7030 to PCM-1630 system

Applications
Producing a CD using a tape recorded on a DAT recorder.

Connections
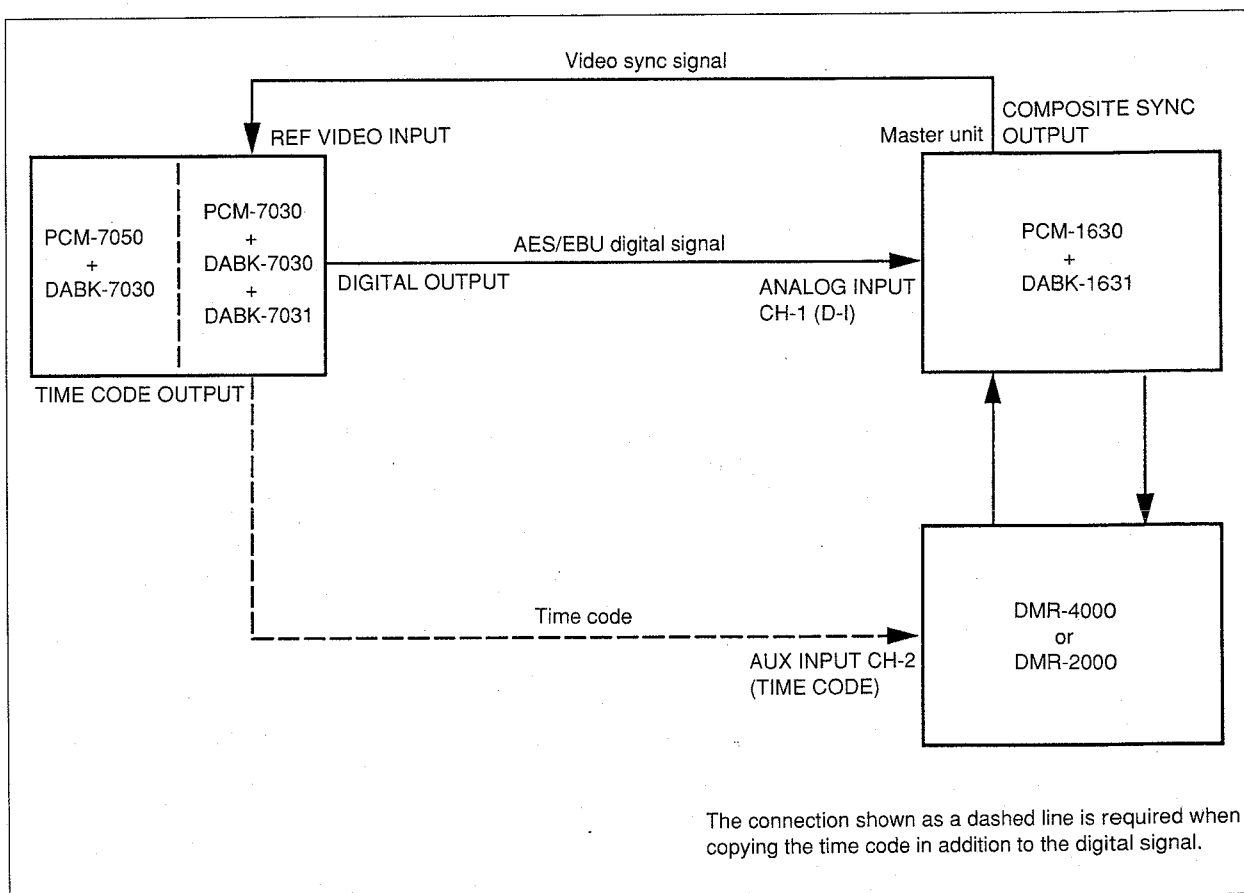
Copying from PCM-7050/7030 to PCM-1630 system

Notes

- Make the PCM-1630 system the master unit for system synchronization. On the PCM-7050/7030, select the external synchronization (video) mode by setting the SYNC signal selector to VIDEO, and set the SAMPLING FREQ selector to 44.1 kHz on its front panel.
- To also copy the time code from the tape in the PCM-7050/7030:
  1) On the PCM-7050/7030, select the SMPTE (30 Hz) time code, non-drop frame mode (NDF).
  2) On the DMR-4000 or DMR-2000, select the non-drop frame mode.
  3) On the PCM-7050/7030, select SYNC PB "ENABLE" mode (i.e., the factory setting for locking the off-tape time code and the input video sync signal in phase).
  4) Start playback on the PCM-7050/7030 before starting recording on the DMR-4000 or DMR-2000.

6-4

Problems caused when the above conditions are not met

- If you use a DAT tape recorded at a sampling frequency other than 44.1 kHz, the signals copied on the PCM-1630 will be muted.
- The time code will not record correctly unless you have selected SYNC PB "ENABLE" on the PCM-7050/7030.
- Changing the playback speed on the PCM-7050/7030 will result in muting on the PCM-1630. (If it is necessary to change the playback speed while copying, you should do analog copying.)

6-2-2. Digital Copying between PCM-7050/7030 and PCM-3402 Digital Audio Recorder

Digital copying from PCM-3402 digital audio recorder to PCM-7050/7030

Applications
Simple copying

Connections
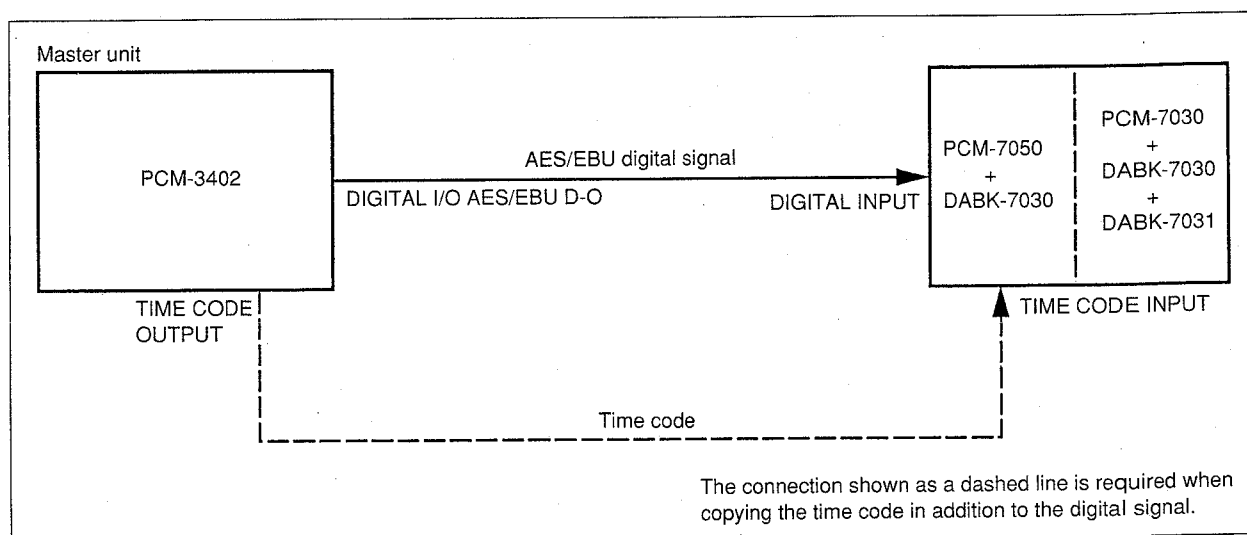
Copying from PCM-3402 to PCM-7050/7030

Notes

- Make the PCM-3402 the master unit for system synchronization. On the PCM-7050/7030, select the external synchronization (D-I) mode to use the D-I sync signal (by setting the SYNC signal selector on the front panel to EXT and the EXT SYNC selector on the connector panel to D-I).
- On the PCM-7050/7030, select the same sampling frequency (44.1 kHz or 48 kHz) as selected on the PCM-3402.
- To also copy the time code from the tape in the PCM-3402, make the same time code setting on the PCM-7050/7030 as on the PCM-3402. Furthermore, make sure that on the PCM-3402 the time code is synchronized with the sampling frequency.
- Do not change the playback speed of the PCM-3402.

Problems caused when the above conditions are not met
- The PCM-7050/7030 will not be able to copy if the input sampling frequency does not match the sampling frequency set on it. (Changing the playback speed of the PCM-3402 will also make copying difficult.)
- If the input time code does not match the corresponding setting on the PCM-7050/7030, the unit will not record correctly.

Digital copying from PCM-7050/7030 to PCM-3402

Applications
Simple copying

Connections
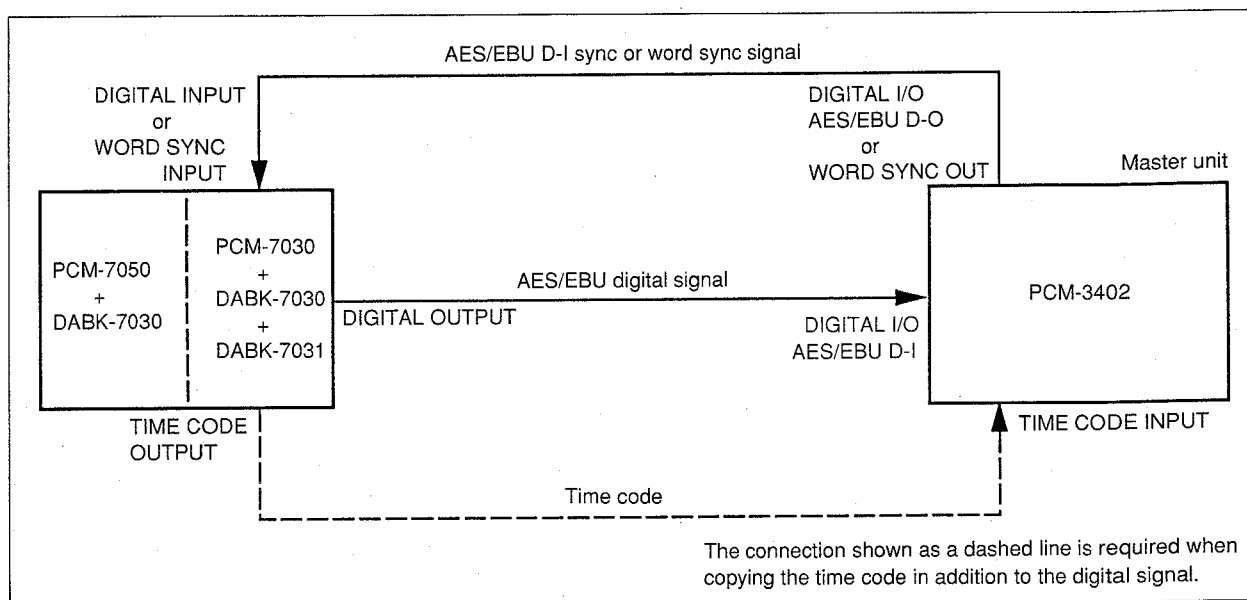
Copying from PCM-7050/7030 to PCM-3402

Notes

- Make the PCM-3402 the master unit for system synchronization. On the PCM-7050/7030, select the external synchronization (D-I/word) mode to use the D-I sync signal or word sync signal (by setting the SYNC signal selector on the front panel to EXT and the EXT SYNC selector on the connector panel to D-I or WORD).
- On the PCM-3402, set the sampling frequency to 44.1 kHz or 48 kHz either of which is selectable on the PCM-7050/7030.
- Do not change the playback speed of the PCM-7050/7030.

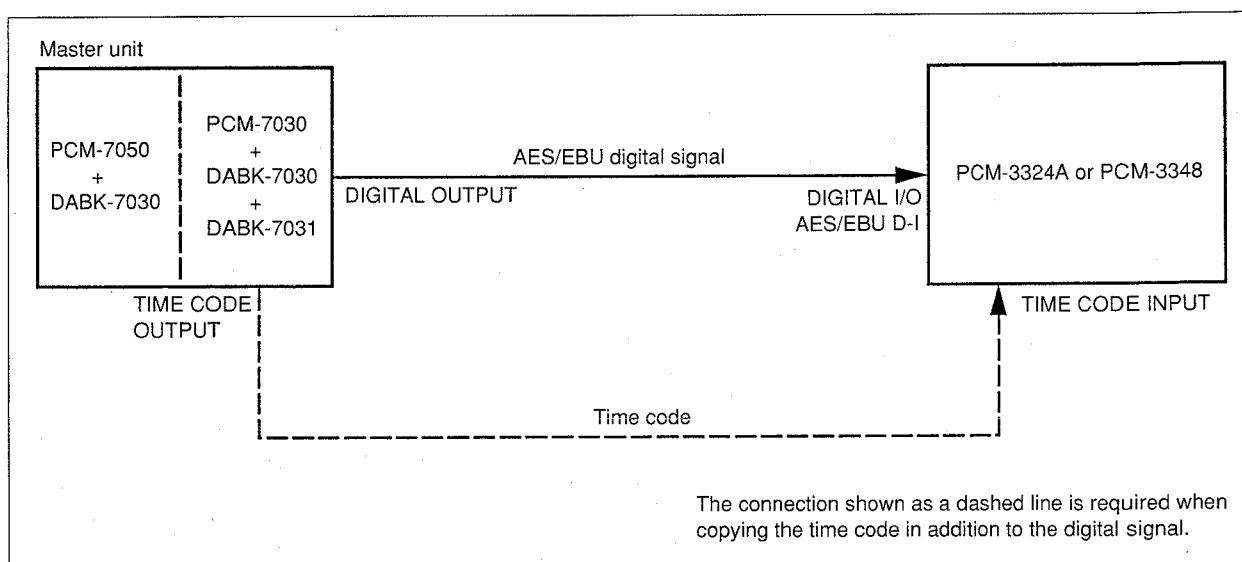Problems caused when the above conditions are not met
- The PCM-3402 will be unable to copy if the input sampling frequency does not match the sampling frequency set on it. (Changing the playback speed of the PCM-7050/7030 will also make copying difficult.)
- If the time code input to the PCM-3402 does not match the corresponding setting on it, the PCM-3402 will not be able to record correctly.

Digital copying from PCM-3324A or PCM-3348 to PCM-7050/7030

Applications
- Copying a tape carrying a package program (including lay-back copying)
- Simple copying
- Time-shift copying of a track

Connection
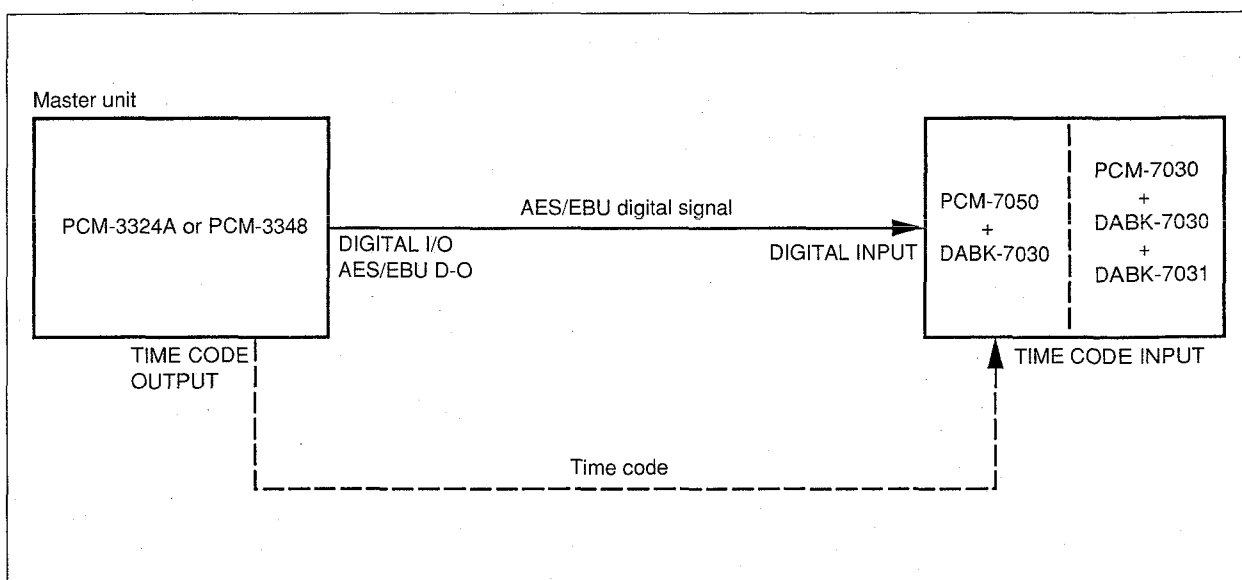
Copying from PCM-3324A or PCM-3348 to PCM-7050/7030

Package program
A complete program recorded on two channels

Lay-back copying
Using audio editing to copy the signal recorded on a channel of a multi-track audio tape onto the audio track of a master tape.

Time-shift copying
Copying the signal recorded on a track of a tape onto a different location or another channel on the same tape.

Notes

- Make the PCM-3324A or PCM-3348 the master unit for system synchronization. On the PCM-7050/7030, select the external synchronization (D-I) mode to use the D-I sync signal (by setting the SYNC signal selector on the front panel to EXT and the EXT SYNC selector on the connector panel to D-I).
- On the PCM-7050/7030, set the same sampling frequency as set on the PCM-3324A or PCM-3348 (44.1 kHz or 48 kHz).
- To also copy the time code from the tape in the PCM-3324A or PCM-3348:
  1) Make sure that the time code recorded on the PCM-3324A or PCM-3348 is synchronized with the sampling frequency.
  2) On the PCM-7050/7030, select the same time code as that recorded on the tape in the PCM-3324A or PCM-3348.
- Do not change the playback speed of the PCM-3324A or PCM-3348.
- The PCM-3324 cannot be incorporated in this system, because it has no digital input/output connector complying with the AES/EBU format.

Problems caused when the above conditions are not met

- The PCM-7050/7030 will not copy if the input sampling frequency does not match the sampling frequency set on it. (Changing the playback speed of the PCM-3324A or PCM-3348 will also make copying difficult.)
- If the time code input to the PCM-7050/7030 does not match the corresponding setting on it, the PCM-7050/7030 will not record correctly.

Digital copying from PCM-7050/7030 to PCM-3324A or PCM-3348

Applications
- Lay-down copying
- Simple copying
- Time-shift copying

Connection

Copying from PCM-7050/7030 to PCM-3324A or PCM-3348

Notes

- Make the PCM-7050/7030 the master unit for system synchronization. Set the SYNC signal selector on the front panel to INT.
- On the PCM-7050/7030, set the SAMPLING FREQ selector on the front panel to 44.1 kHz or 48 kHz.
- Do not change the playback speed of the PCM-7050/7030.
- The PCM-3324 cannot be incorporated in this system, because it has no digital input/output connector complying with the AES/EBU format.

Problems caused when the above conditions are not met
- The PCM-3324A or PCM-3348 will not be able to copy if the input sampling frequency does not match the sampling frequency set on it. (Changing the playback speed of the PCM-7050/7030 will also make copying difficult.)
- If the time code input to the PCM-3324A or PCM-3348 does not match the corresponding setting on it, neither the PCM-3324A nor the PCM-3348 will be able to record correctly.

Lay-down copying
Copying the audio signal supplied by a VTR onto a multi-track audio tape.

6-10

The "digital VTR complying with D-1 format" mentioned in this chapter refers to the following VTR:

- DVR-1000/2000 series component digital VTR

The "digital VTR complying with D-2 format" mentioned in this chapter refers to the following VTR:

- DVR-10/20 series composite digital VTR

Digital copying from D-1/D-2 format digital VTR to PCM-7050/7030

Applications

Audio track copying (producing a copy (for tape transportation) of the originally recorded track for use in lay-down copying)
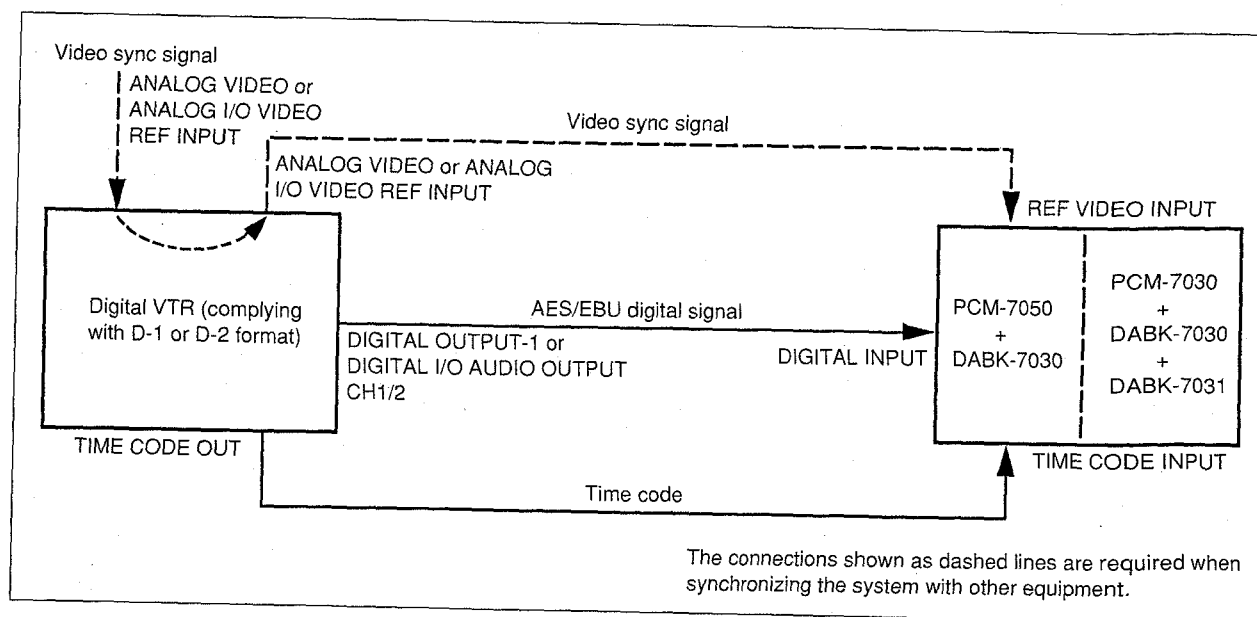
Connections

Copying from digital VTR to PCM-7050/7030

Notes

- Make the digital VTR (complying with D-1/D-2 format) the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings 1) or 2):
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO and the SAMPLING FREQ selector to 48 kHz.
  or
  2) Set the SYNC signal selector to EXT and the SAMPLING FREQ selector to 48 kHz on the front panel, and the EXT SYNC selector to D-I on the connector panel.
- Make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape complying with D-1/D-2 format.

Problems caused when the above conditions are not met
- In the external video synchronization mode, if the video sync signal frequency is set incorrectly, the PCM-7050/7030 will not record.
- In the external video synchronization mode, if the sampling frequency set on the PCM-7050/7030 does not match the sampling frequency ID carried by the AES/EBU digital signal, the PCM-7050/7030 will not record.
- If the input signal sampling frequency does not match the sampling frequency set on the PCM-7050/7030, the PCM-7050/7030 will not record correctly.

Digital copying from PCM-7050/7030 to D-1/D-2 format digital VTR

Applications
- Lay-back copying for sound sweetening (for audio post-production)
- Copying the original audio signal recorded on a DAT tape onto the audio track of a video tape
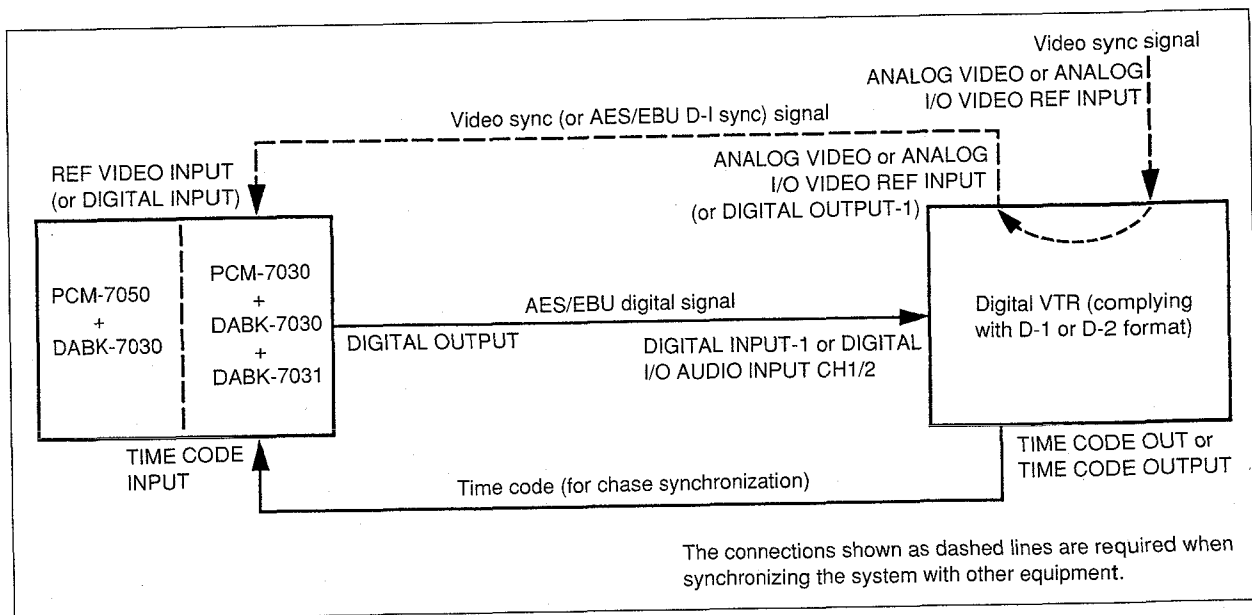
Copying from PCM-7050/7030 to digital VTR

Notes

- Make the digital VTR (complying with D-1/D-2 format) the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings 1) or 2):
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO and the SAMPLING FREQ selector to 48 kHz.

  or

  2) On the connector panel, connect the AES/EBU D-I sync signal to the DIGITAL INPUT connector and set the EXT SYNC selector to D-I. On the front panel, set the SYNC signal selector to EXT and the SAMPLING FREQ selector to 48 kHz.
- To copy in chase synchronization mode (lay-back copying), make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the digital VTR.

Problems caused when the above conditions are not met
- If the video sync signal frequency is set incorrectly, playback will be muted.
- If a tape recorded at a sampling frequency of other than 48 kHz is played back on the PCM-7050/7030, the digital VTR will not be locked by the D-I sync signal so that the digital VTR will not record correctly.

6-2-5. Digital Copying between PCM-7050/7030 and BVH-2800 1-inch VTR System

The BVH-2800 1-inch VTR system consists of the following equipment:
- BVH-2800 1-inch VTR with digital audio
- BKH-2801 PCM audio processor for BVH-2800
- BKH-2804 digital audio I/O interface (optional accessory for BKH-2801)

Digital copying from BVH-2800 1-inch VTR system to PCM-7050/7030

Applications
Audio track copying (producing a copy (for tape transportation) of the originally recorded track for use in lay-down copying)
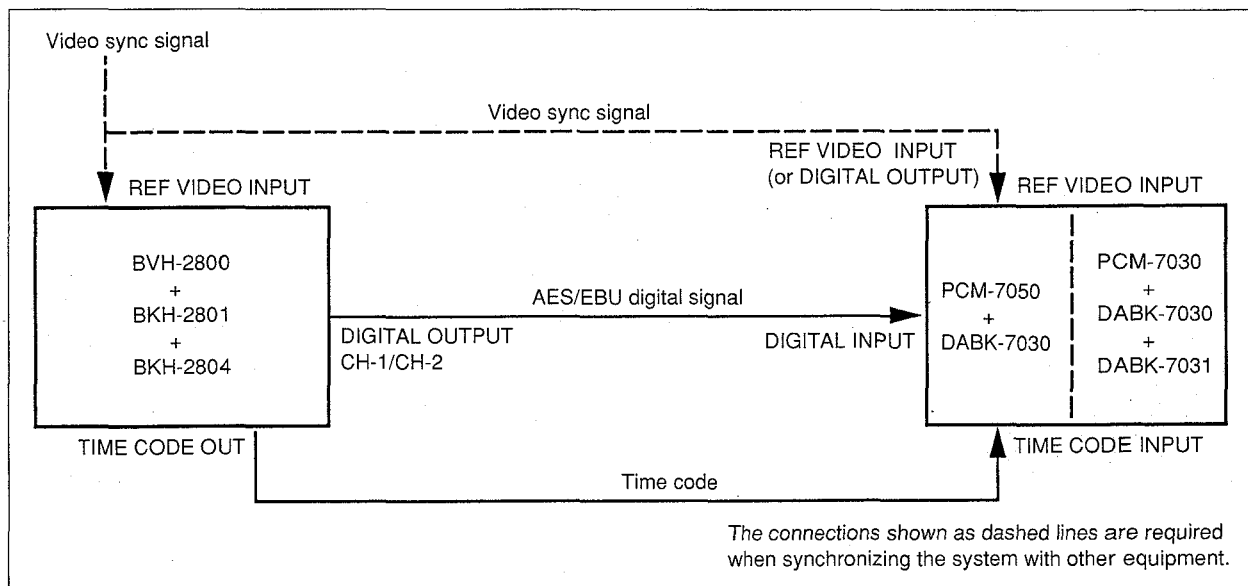
Connections

Copying from BVH-2800 system to PCM-7050/7030

- Make the BVH-2800 system the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings 1) or 2):
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO and the SAMPLING FREQ selector to the sampling frequency given by the tape in the BVH-2800.

  or

  2) On the front panel, set the SYNC signal selector to EXT and the SAMPLING FREQ selector to the sampling frequency given by the tape in the BVH-2800. On the connector panel, set the EXT SYNC selector to D-I.
- Make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the BVH-2800.

Problems caused when the above conditions are not met
- If the video sync signal frequency setting is incorrect, the tape will not record.
- In the external video synchronization mode, if the sampling frequency set on the PCM-7050/7030 does not match the sampling frequency ID carried by the AES/EBU digital signal, the PCM-7050/7030 will not be able to record.
- If the input sampling frequency signal does not match the sampling frequency set on the PCM-7050/7030, the PCM-7050/7030 will not be able to record correctly.

Digital copying from PCM-7050/7030 to BVH-2800 1-inch VTR system

Applications
- Lay-back copying for sound sweetening
- Copying the original audio signal recorded on a DAT tape onto the audio track of a video tape
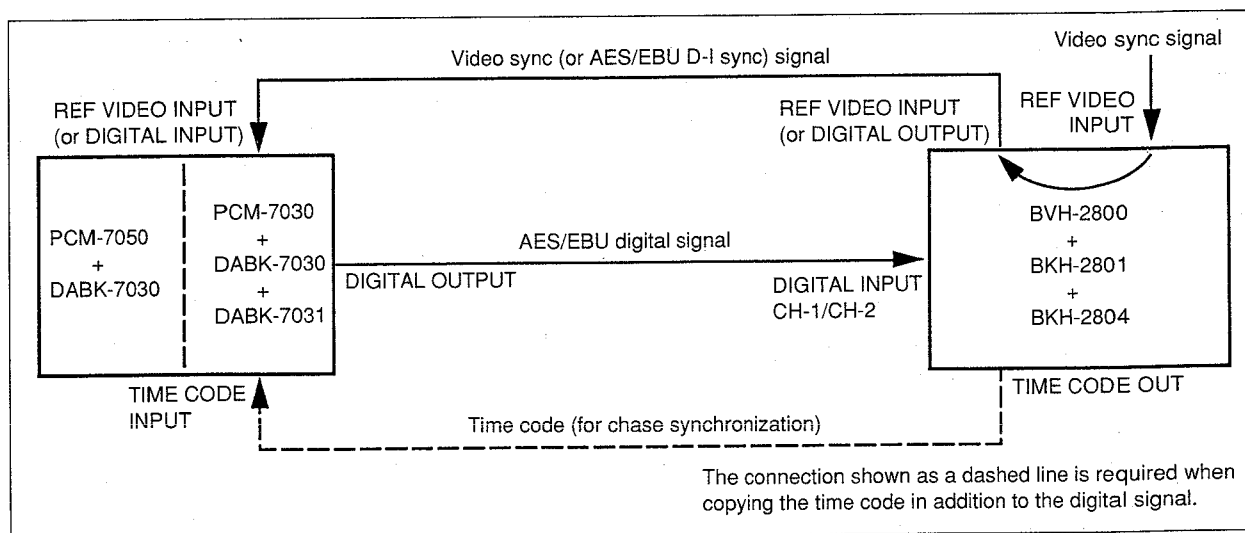
Connections

Copying from PCM-7050/7030 to BVH-2800 system

Notes

- Make the BVH-2800 system the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings 1) or 2):
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO and the SAMPLING FREQ selector to the sampling frequency given by the tape in the BVH-2800.
  or
  2) On the connector panel, connect the AES/EBU D-I sync signal to the DIGITAL INPUT connector and set the EXT SYNC selector to D-I. On the front panel, set the SYNC signal selector to EXT and the SAMPLING FREQ selector to the sampling frequency given by the tape in the BVH-2800.
- To copy in chase synchronization mode (lay-back copying), make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the digital VTR.
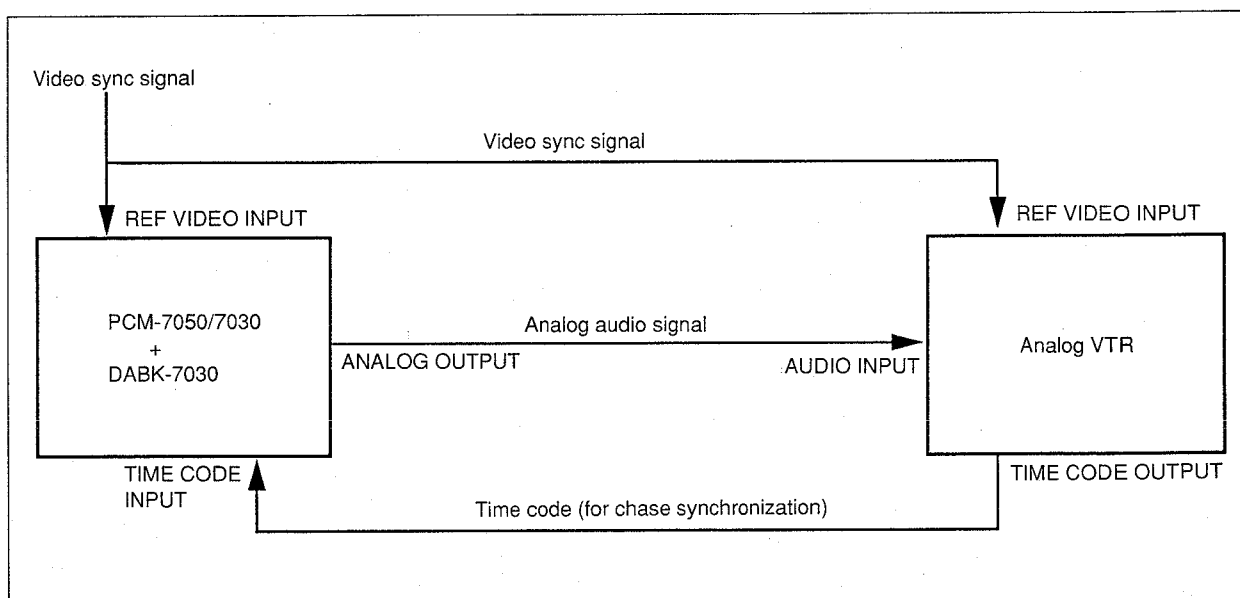
Problem caused when the above conditions are not met
If the video sync signal frequency setting is incorrect, playback will be muted.

Copying from analog VTR to PCM-7050/7030

Applications
Audio track copying (producing a copy (for tape transportation) of the originally recorded track for use in lay-down copying)

Connections

Video sync signal

Video sync signal

REF VIDEO INPUT

REF VIDEO INPUT

Analog audio signal

Analog VTR

PCM-7050/7030
+
DABK-7030

AUDIO OUTPUT

ANALOG INPUT

TIME CODE
OUTPUT

TIME CODE INPUT

Time code
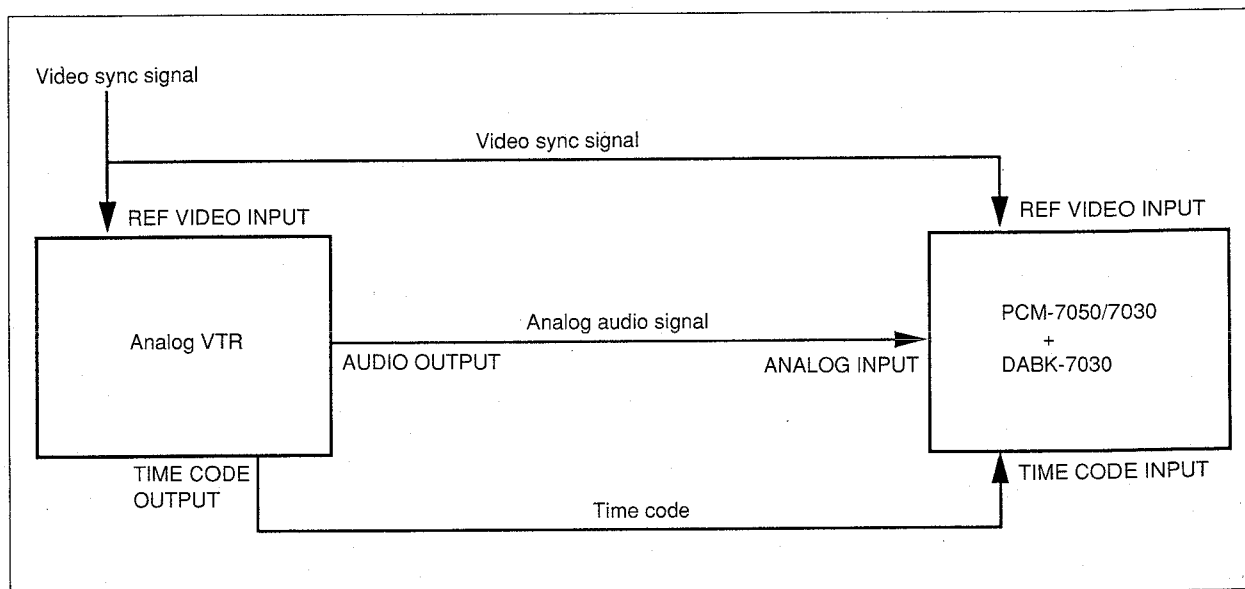
Copying from analog VTR to PCM-7050/7030

Notes

- Make the VTR the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings:
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO.
  2) On the front panel, set the SAMPLING FREQ selector to 48 kHz or 44.1 kHz.
- Make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the VTR.
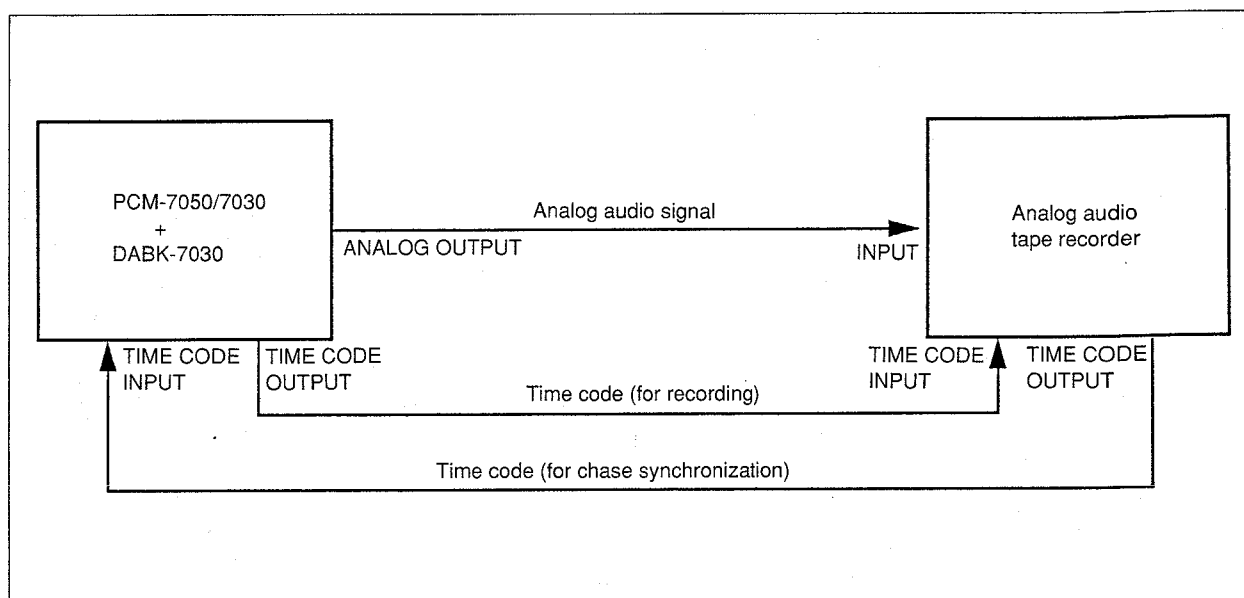
Problem caused when the above conditions are not met
The time code will not record correctly.

Copying from PCM-7050/7030 to analog VTR

Applications
- Lay-back copying for sound sweetening
- Copying the original audio signal recorded on a DAT tape onto the audio track of a video tape

Connections

```
Video sync signal
      |
      |                          Video sync signal
      |        ┌──────────────────────────────────────────────┐
      ▼ REF VIDEO INPUT                                        ▼ REF VIDEO INPUT
  ┌─────────────────┐                              ┌─────────────────┐
  │ PCM-7050/7030   │        Analog audio signal   │                 │
  │       +         │ ──────────────────────────▶  │   Analog VTR    │
  │  DABK-7030      │ ANALOG OUTPUT     AUDIO INPUT │                 │
  └─────────────────┘                              └─────────────────┘
    TIME CODE ▲                                      TIME CODE OUTPUT
    INPUT     │   Time code (for chase synchronization)  │
              └──────────────────────────────────────────┘
```

Copying from PCM-7050/7030 to analog VTR

Notes

- Make the VTR the master unit for system synchronization.
- On the PCM-7050/7030, make the following settings:
  1) On the connector panel, connect the video sync signal to the REF VIDEO INPUT connector. On the front panel, set the SYNC signal selector to VIDEO.
  2) Set the SAMPLING FREQ selector to 48 kHz or 44.1 kHz on the front panel.
- To copy in chase synchronization mode (lay-back copying), make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the VTR.

Problem caused when the above conditions are not met
The length of the playback tape and the copied tape will differ unless the PCM-7050/7030 and the analog VTR are frequency-synchronized.

Copying from analog audio tape recorder to PCM-7050/7030

Applications
   Simple copying

Connections
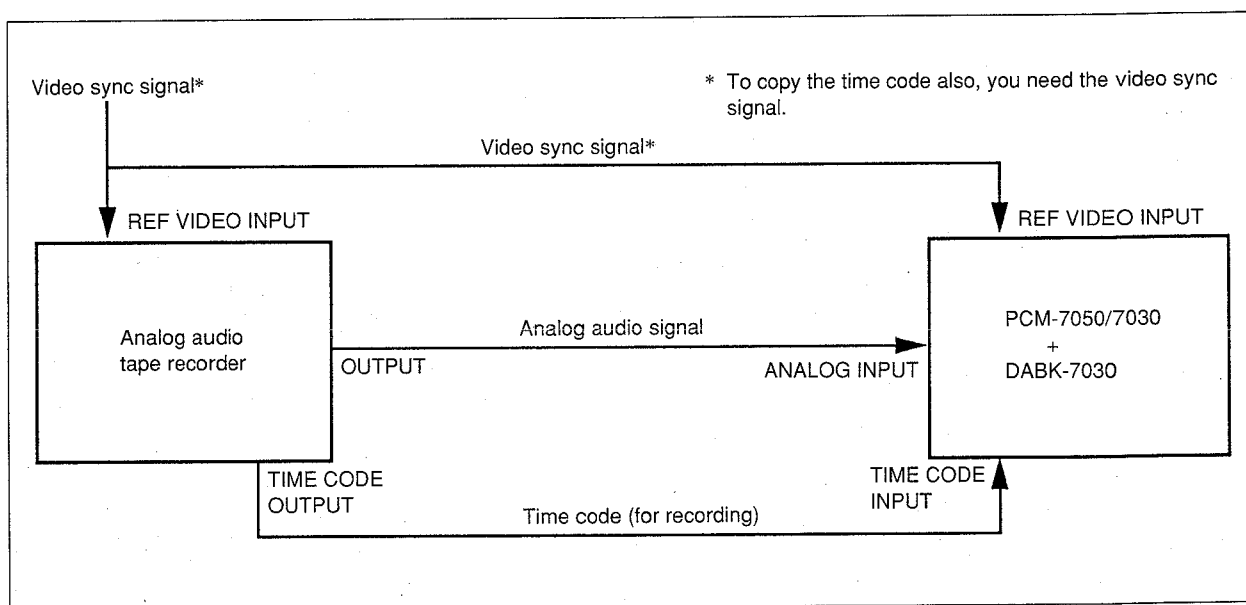
Copying from analog audio tape recorder to PCM-7050/7030

Note

To copy the time code in addition to the audio signal:
1) The time code to be copied must be frequency-synchronized with the video sync signal.
2) Ensure that the playback time code for the analog audio tape recorder is in phase with the input video sync signal.
3) Make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the analog audio tape recorder.

Problem caused when the above conditions are not met
The time code will not be recorded correctly.

Copying from PCM-7050/7030 to analog audio tape recorder

Applications
Simple copying

Connections


```
┌──────────────────┐                                          ┌──────────────────┐
│ PCM-7050/7030    │          Analog audio signal             │  Analog audio    │
│       +          ├─────────────────────────────────────────▶│  tape recorder   │
│ DABK-7030        │ ANALOG OUTPUT                    INPUT    │                  │
└──────────────────┘                                          └──────────────────┘
   ▲ TIME CODE  TIME CODE                        TIME CODE ▲  TIME CODE
     INPUT      OUTPUT         Time code (for recording)  INPUT   OUTPUT

           Time code (for chase synchronization)
```

Copying from PCM-7050/7030 to analog audio tape recorder

Note

To copy in chase synchronization mode, make the time code setting on the PCM-7050/7030 consistent with the time code recorded on the tape in the analog audio tape recorder.

Problem caused when the above condition is not met
Recording will not be carried out correctly.

6-3-1. Editing Under the Control of BVE-9100/9000/910/900/600 Video Editor

Function

By connecting the PCM-7050/7030 to the BVE-9100/9000/910/900/600 Video Editor, you can control the PCM-7050/7030 from the video editor through the 9-pin remote interface.

Connections
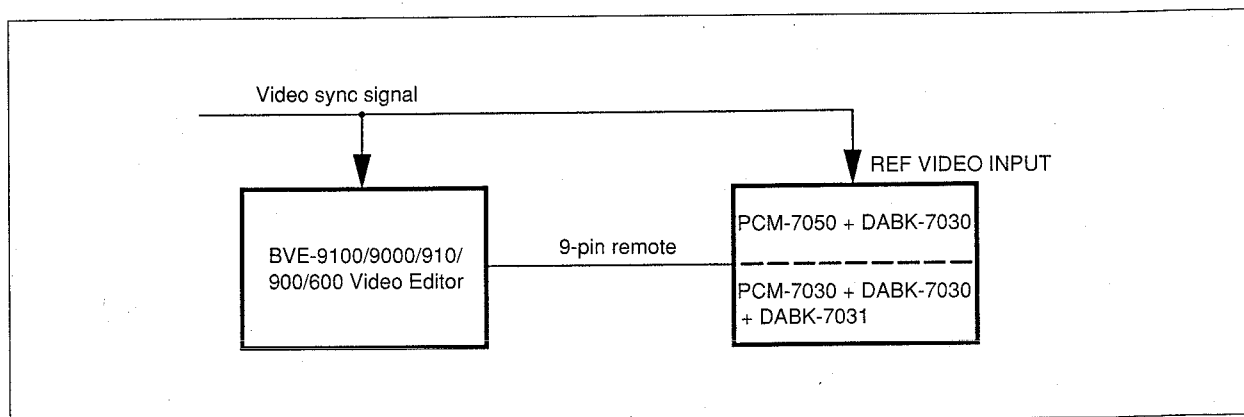
Editing between PCM-7050/7030 and BVE-9100/9000/910/900/600 Video Editor

PCM-7050/7030 settings

1 Set the REMOTE (9P)/LOCAL selector to REMOTE (9P).

2 Set the SYNC signal selector to VIDEO.

3 Set "rEF tcF" in the setup menu.
- When you use NTSC, SMPTE drop frame time code: "29 97 dF"
- When you use NTSC, SMPTE non-drop frame time code: "29 97 ndF"
- When you use PAL/SECAM, EBU time code: "25 Ebu".

4 Set "SYnc Pb" in the setup menu to "EnAbLE".

5 Set "SYnc rEc" in the setup menu to "on" to select sync recording mode.

Notes

- "VIDEO" appears on the display when the video sync signal is input to the PCM-7050/7030, and the setting of "rEF tcF" in the setup menu matches the sync signal frequency. If the "VIDEO" indication on the display is blinking, check the setting of the video sync signal and the time code format.

- Set the time code format correctly by using "rEF tcF" in the setup menu. The PCM-7050/7030 does not automatically distinguish between the drop frame time code and the non-drop frame time code.
- Confirm the "SYNC PB" indication on the PCM-7050/7030 display when the unit is playing back.

BVE-9100/9000/910/900/600 Video Editor settings

1 Set the TC SOURCE in the AUX mode to "LTC", "LTC+", "LTC : VITC" or "LTC : VITC+".

2 **When using the following video editor**
BVE-900 (without BKE-900K): V1.11 or higher
BVE-900 (with BKE-900K): V2.03 or higher
BVE-910: V2.00 or higher
BKE-9611/9004/9004A/9012 of the BVE-9000/9100: V2.01 or higher
Set the device types BYTE 1 and 2 of block-1 (CONSTANT-1) to "FF" (UNDEFINED). In this case, VTR CONFIGURATION is automatically set depending on the device type.

When using BVE-600/900/910/9000/9100 editors other than the models listed above.
Set the following VTR constants.

VTR	Machine parameter group		
	Block-1 (CONSTANT-1)		Block -2 (CONSTANT-2)
	Device type	3 4 5 6 7 8	1 2 3 4 5 6 7 8
PCM-7030 NTSC	70 00	00 96 05 05 03 80	0A 07 FF 00 00 5C FF 5A
PCM-7030 PAL	71 00	00 96 05 05 03 80	0A 07 FF 00 00 4C FF 4B
PCM-7050 NTSC	70 01	00 96 05 05 03 80	0A 07 FF 00 00 5C FF 5A
PCM-7050 PAL	71 01	00 96 05 05 03 80	0A 07 FF 00 00 4C FF 4B

NTSC: When the setup menu "rEF-tcF is set to "30ndF", "29.97 ndF" or "29.97 dF"
PAL: When the setup menu "rEF-tcF is set to "25 Ebu"

Set the following machine parameters when the software version of the BKE-9611/9004/9004A/9012 of the BVE-9000/9100 is 2.00 or lower.

VTR	Machine parameter group						
	Block-4 (VTR CONFIGURATION)						
	1	2	3	4	5	6	7	8
PCM-7050/ 7030 NTSC, PAL	01	00	88	71	03	7C	00	00

Notes

- The initial speed function (DMC edit) of the BVE-9000/910/900/ 600 Video Editor is not supported by this editing system.
- You can use the first edit function of the video editor (BVE-9100/ 9000/910/900/600), when you set the setup menu "1st Edit" item to "on" and use a blank tape.
- When the PCM-7050/7030 enters FF or REW mode, the time code indication on the Video Editor may blink.

Memory jog from video editor

To perform memory jog under control of the video editor, follow the procedure below.

When using the following BVE-910/9100 video editor to control memory jog

Software version with which memory jog can be performed:

BVE-910: V2.10 or higher
BVE-9100: BKE-9101/9102: V1.04 or higher
BKE-9611/9004/9004A/9102: V2.01 or higher

Setting the PCM-7050/7030

1 Set the setup menu "JoG ctL" item to "oFF".

2 Set the setup menu "StArt" item to "Edit-E" or "Edit-c".

Operation example: When using the BVE-9100
Perform the following operations from the BVE-9100

For details of how to operate the BVE-9100, refer to the OPERATION MANUAL of the BVE-9100.

1 Press the JOG key while holding down the CTRL key. Then, press the JOG key again.
The unit stores the played-back sound, around the point where the JOG key is pressed, to sound memory. The status display shows "MJOG".
or
Press the JOG key while holding down the CTRL key. Then locate the edit point or desired point by using the OUT or SCR-PAD and GO TO keys.
The unit automatically stores the played-back sound as the start point of the locate point.
The status display shows "MRDY".

2 Press the JOG key, then turn the search dial.
The unit plays back the sound stored in sound memory at a speed from still to normal speed. The time code of the sound in the sound memory is displayed under "POSITION" on the display.

3 Press the PLAY key while holding down the CTRL key.
The unit plays back the sound from the time code displayed under "POSITION" to the end of the sound in memory at normal speed.
The status display shows "MPLY".

4 Set the edit point by pressing the MARK IN or MARK OUT key.

To release memory jog mode
Press any key other than the JOG key. Memory jog mode is released.

When using a video editor that can not control memory jog
Setting the PCM-7050/7030

1 Set the setup menu "JoG ctL" item to "on".

2 Set the setup menu "StArt" item to "Edit-E" or "Edit-c".

3 Set the REMOTE (9p)/LOCAL selector to LOCAL mode and set the unit to memory start mode by pressing the MEMORY START key. Or, set the setup menu "iS dFLt" item to "on", then turn on the power. And then, set the selector to REMOTE mode.

Operation example: When using the BVE-900
Perform the following operations from the BVE-900

For details of operations performed from the BVE-900, refer to the OPERATION MANUAL of the BVE-900.

1 To locate an edit point or desired point using the OUT or SCR-PAD and GO TO keys.
The unit automatically stores the played-back sound as the start point of the locate point.
The status display shows "MRDY".

2 Press the JOG key, SHTL or VAR key, then turn the search dial.
The unit plays back the sound stored in the sound memory at a speed from still to normal speed. The time code of the sound in the sound memory is displayed under "POSITION" in the display.

3 Set the edit point by pressing the MARK IN or MARK OUT key.

To release memory jog mode
Press any key other than the JOG, SHTL and VAR keys. Memory jog mode is released.

Connecting the BVE-800 video editor

You can connect the unit to a BVE-800 video editor.

Setting the PCM-7050/7030

1 Set the REMOTE (9P)/LOCAL selector to REMOTE (9P).

2 Set the SYNC signal selector to VIDEO.

3 Set the setup menu "rEF tcF" item as follows.

NTSC system
- For SMPTE time code drop frame: "2997 dF"
- For SMPTE time code non drop frame: "2997 ndF"

PAL/SECAM system
"25 Ebu"

4 Set the setup menu "SYnc Pb" item to "EnAbLE".

5 Set the setup menu "SYnc rEc" item to "on".

6 Set the setup menu "rc rtn" item to "oFF".

Setting the BVE-800

1 Set the TC/CTL selector on the front panel to TC.

2 Set the SYNCHRONIZE selector on the front panel to ON1 or ON2. To use the PCM-7050/7030 as a recorder, set the SYNCHRONIZE selector to ON1.

3 When using the PCM-7050/7030 as a recorder, set the PREROLL TIME selector to 10.

4 To set SW2 of the BK-807 to frame −3, set the DIP switch as follows.
SW2-1: ON
SW2-2: OFF
SW2-3: ON
SW2-4: ON
SW2-6: OFF
SW2-7: OFF

5 To set SW3 of the BK-807 to frame −7, set the DIP switch as follows.
SW3-1: OFF
SW3-2: OFF
SW3-3: OFF
SW3-4: ON

Notes

- The first edit function can be used only when the setup menu "1st Edit" item is set to "on" and a blank tape is used.
- The memory jog function is not available.
- When using the PCM-7050/7030 as a recorder, press the AUDIO CH-1 key and AUDIO CH-2 key together.

6-27

Function

The recorder VTR controls the player PCM-7050/7030.

Example connection with a VTR that has AES/EBU digital audio signal input connectors
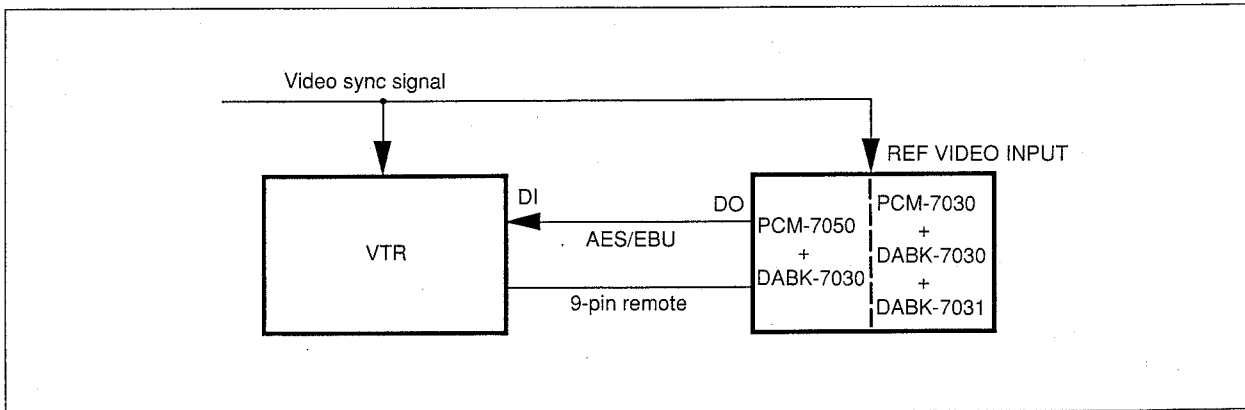
Example connection with a VTR that has AES/EBU digital audio signal input connectors

Notes

- When the sampling frequency of the PCM-7050/7030 differs from that of the VTR, connect the equipment using analog audio signal or connect them via the DFX-2400 Sampling Rate Converter.
- You don't need to connect the time code.

Example connection with a VTR that analog audio signal input connectors

Example connection with a VTR that has analog audio signal input connectors

PCM-7050/7030 settings

1 Set the REMOTE(9P)/LOCAL selector to REMOTE(9P).

2 Set the SYNC signal selector to VIDEO.

3 Set "rEF tcF" in the setup menu.
- When you use NTSC, the SMPTE drop frame time code: "29 97 dF"
- When you use NTSC, the SMPTE non-drop frame time code: "29 97 ndF"
- When you use PAL/SECAM, EBU time code: "25 Ebu".

4 Set "SYnc Pb" in the setup menu to "EnAbLE".

Notes

- The "VIDEO" indication appears when the video sync signal is input to the PCM-7050/7030 and the setting of "rEF tcF" in the setup menu matches the sync signal frequency. If the "VIDEO" indication on the display blinks, check the setting of the video sync signal and the time code format.
- Set the time code format by using "rEF tcF" in the setup menu, because the PCM-7050/7030 does not automatically distinguish between the drop frame time code and the non-drop frame time code.
- Confirm the "SYNC PB" indication on the PCM-7050/7030 display when the unit starts playback.
- You don't need to connect the time code.

Function

The DAE-3000 Digital Audio Editor controls the PCM-7050/7030 as the player to perform editing.
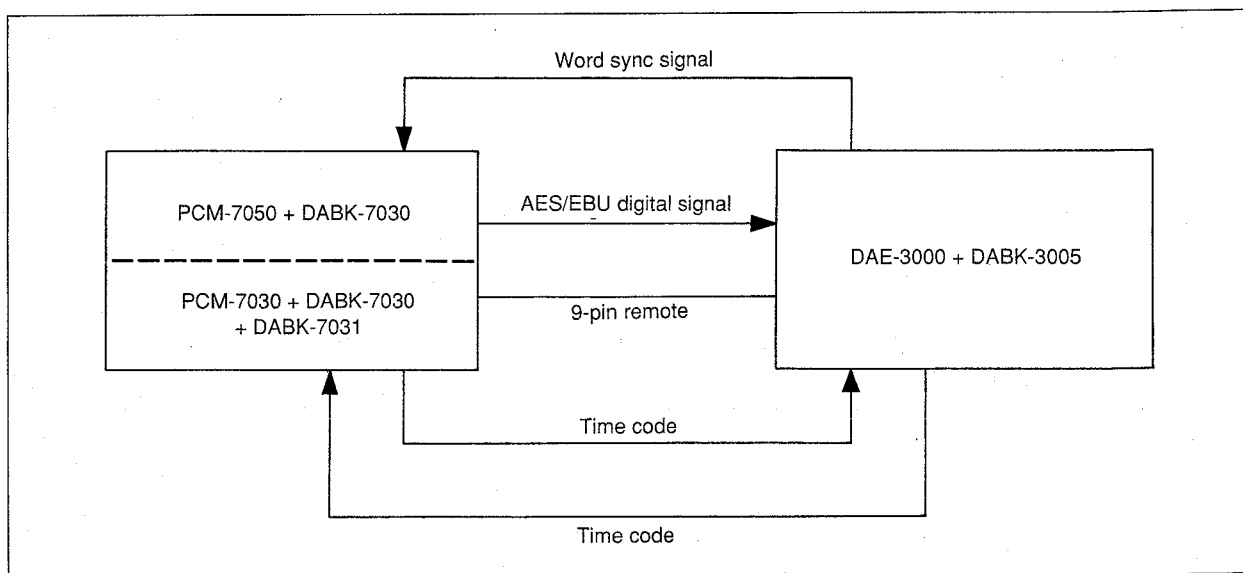
Editing between PCM-7050/7030 and DAE-3000 Digital Audio Editor

PCM-7050/7030 settings
- SYNC signal selector: EXT
- REMOTE(9P)/LOCAL selector: REMOTE(9P)
- SAMPLING FREQ selector: 44.1 kHz
- "rEF tcF" in setup menu: 30 ndF
- "cHASE-S" in setup menu: on
- "FrEErun" in setup menu: oFF
- "tc dLY" in setup menu: d out
- "GEn out" in setup menu: oFF
- "StArt" in setup menu: StArt
- "JoG ctL" in setup menu: oFF
- "1st Edit" in setup menu: oFF
- WORD SYNC 75-ohm termination switch: ON
- EXT SYNC selector: WORD

Notes

- Use a DAT tape on which a recording has been made at a 44.1 kHz sampling frequency.
- Use the SMPTE, 30 Hz non-drop frame time code.
  For details, refer to the operation manual of the DAE-3000 and DABK-3005.

Chapter 7. Warning Indicators and Error Messages

This chapter describes the warning indicators and error messages displayed. The warning indicators mainly indicate tape transport abnormalities. Error messages appearing on the display directly or through the dial menu indicate internal abnormalities and their gravity.
In the event of some operational failure, proceed as directed in this chapter.

7-1-1. Warning Indicator Lamps

The following five warning indicators are mounted on the front panel.

ALARM indicator

MUTE indicator

PB CONDITION indicator

REC INH indicator

SERVO lock indicator
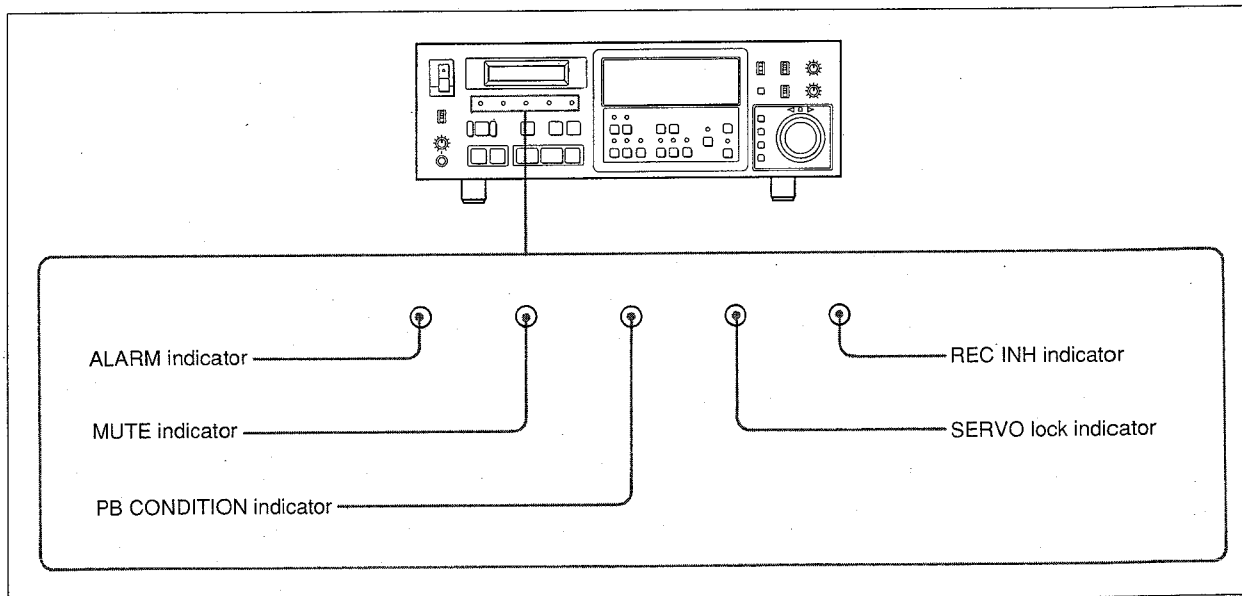
Warning indicator lamps

The above indicators except the SERVO lock indicator and REC INH indicator come on in the event of an abnormality. The SERVO lock indicator illuminates under normal conditions. Therefore, if the SERVO lock indicator goes out when it should be lit, it indicates abnormality.

The functions of each warning indicators are described below.

7-1-2. When the ALARM Indicator Comes On

When any abnormality occurs in the unit, this indicator lights and the display shows the associated error code number.

For error code numbers, see Section 7-2 "Error Messages" (page 7-4).

7-1-3. When the MUTE Indicator Comes On

If proper playback cannot be accomplished due to damaged tape, abnormal tape recordings, or head drum or other transport system failure, the unit is automatically muted (silenced) and the MUTE indicator illuminates. When a troubled portion of the tape passes through the head section and the transport system is restored to normal, the unit resumes normal playback operations. Therefore, even if the MUTE indicator lights, it does not necessarily indicate machine failure. However, if the indicator comes on frequently, you should check the tape and the machine.

7-1-4. When the PB CONDITION Indicator Comes On

When the tape playback results are poor, in other words, the error rate is high, and repetitive interpolation or muting is about to begin, the PB CONDITION indicator comes on. If the indicator lights frequently, you should check the tape and the machine. If an incorrect tape is used, copy its contents to new tape without delay. Note that the "Pb cond" (PB CONDITION) setup in the setup menu can be changed to illuminate the PB CONDITION indicator in either the CORRECTION or INTERPOLATION state. If CORRECTION is selected, the PB CONDITION indicator will come on more frequently.

For further details, see the section on "Pb cond (PB CONDITION)" (page 5-93) in Section 5-3-3 "Setup Menu".

CORRECTION
The system restores any error found in the playback signal to normal using the error-correcting code.

INTERPOLATION
If the error rate exceeds the error correction range, the erroneous data are replaced by the average of the data immediately before and after the erroneous data so as to make the errors inaudible.

7-1-5. When the SERVO Lock Indicator Goes Off

When the head drum revolving speed builds up as specified and the capstan reaches the steady-state rotating speed (this state is referred to as being servo-locked), the SERVO lock indicator comes on. If the head drum or capstan rotation becomes unsteady, the indicator goes off and audio output instability or muting may result. In chase synchronization mode, this indicator does not go on until chase synchronization is achieved.

7-1-6. When the REC INH Indicator Comes On

This indicator lights when a write-protected cassette tape (cassette tape with its tab hole open) or software tape is inserted into the unit. While the indicator is lit, the unit is inhibited from recording. To record onto a write-protected tape, close its write-protect tab hole.

For the write-enabling procedure, see Section 3-5-2 "Preventing Accidental Erasure" (page 3-17).

In the event of error, the self-diagnostic function incorporated in the PCM-7050/7030 works to display the error information. Errors may occur due to mechanical failure, use of defective tape, or the execution of an incorrect operating procedure. However, the following subsections are dedicated to errors resulting from abnormalities of mechanism or tape.

Errors are classified into various levels. The PCM-7050/7030 automatically applies the best remedies in accordance with the levels of specific errors. First the error levels are described below and then the individual error descriptions follow.

7-2-1. Error Levels

Errors are classified into levels 1 through 5 according to the gravity.

Note

If the ALARM indicator comes on, inspection or repairs are necessary. Note the displayed error code and contact a qualified Sony service technician.

Error level 1

There is something wrong with the tape. The MUTE indicator lights up. You may be unable to play back that tape, but you can use the unit as usual. No error code automatically appears on the display. To obtain the error description, call up the "cAution" screen from the dial menu and note the displayed error code.

For the "cAution" screen call-up procedure, see the section on "cAution (CAUTION)" (page 5-22) in Section 5-3-2 "Display Menu".

Remedy
It is necessary to check the tape and the machine that produced the tape.

Error level 2

A minor error or operating error has occurred. The word "cAution" and the error code appear on the display, but you can continue to use the unit.

Remedy
Check for improper use of the unit. If errors at this level occur frequently, contact a qualified Sony service technician.

Error level 3

The unit has been left in the adjustment mode. The ALARM indicator flashes on and off. No error code automatically appears on the display. To obtain the error description, call up the "cAution" screen from the dial menu and note the displayed error code. In this state, the unit cannot be used normally.

Remedy
Contact a qualified Sony service technician.

Error level 4

A serious error has occurred, affecting part of the unit. The ALARM indicator comes on. In the event of this type of error, however, a limited number of functions can be exercised. No error code automatically appears on the display. To obtain the error description, call up the "Error" screen from the dial menu.

For the "Error" screen call-up procedure, see the section on "Error (ERROR)" (page 5-21) in Section 5-3-2 "Display Menu".

Remedy
Contact a qualified Sony service technician.

Error level 5

A serious error has occurred in the unit. The ALARM indicator comes on, and the display reads "ERROR" and shows the error code. In this state, all the keys of the unit are inoperative. If this condition occurs, turn the power off and then turn it back on to check whether the ALARM indicator goes off. If the ALARM indicator goes off, the unit is operative again.

Remedy
The unit needs to be inspected. Contact a qualified Sony service technician.

7-2-2. Error Codes

The numbers appearing on the display together with the "Error" or "cAution" indication in the event of error occurrence are referred to as error codes. The error codes outline the errors detected so that you can tell how and what parts of the unit are affected.
The meanings and error levels of the error codes are indicated below.

When the display reads "Error 1-**"

An error has occurred on the system control circuit board.

Error Code 1-**

Error code	Meaning	Error level
1-01	The address bus is in error.	5
1-02	The data bus is in error.	5
1-03	The ROM (read-only memory) is in error.	5
1-04	The RAM (random-access memory) is in error.	5
1-05	The backup memory data has been destroyed.	5
1-10	The interrupt controller is in error.	5

When the display reads "Error 2-**"

An error has occurred on the servo circuit board.

Error Code 2-

Error code	Meaning	Error level
2-02	The data bus is in error.	5
2-04	The RAM (random-access memory) is in error.	5
2-05	The data stored in the servo (SV) backup memory has been destroyed.	4
2-10	A communication interrupt error has occurred.	5
2-20	A cassette compartment position error has occurred.	5
2-21	Cassette compartment has malfunctioned.	5
2-22	The tape guide position error has occurred.	5
2-23	Cassette loading motor has malfunctioned.	5
2-24	Pinch roller has malfunctioned.	5
2-30	Head drum motor has malfunctioned.	5
2-31	The head drum motor does not rotate.	5
2-32	The head drum revolving speed has increased or decreased.	5
2-33	The head drum motor does not stop.	5
2-40	The capstan motor does not rotate.	5
2-41	The capstan motor does not stop.	5
2-50	The take-up reel motor does not rotate.	5
2-51	The supply reel motor does not rotate.	5
2-52	The take-up reel motor does not stop.	5
2-53	The supply reel motor does not stop.	5
2-60	The tape transport error has occurred.	5
2-70	Moisture condensation has occurred on the head drum. See Section 3-1-2 "Condensation".	5

When the display reads "Error 3-**"

An error has occurred on the signal processing circuit board.

Error Code 3-

Error code	Meaning	Error level
3-02	The data bus is in error.	5
3-10	The clock system (leading head) is in error.	5
3-11	The clock system (trailing head) is in error.	5
3-12	The clock system ("DAT FRAME") is in error.	5

When the display reads "Error 4-**" (for PCM-7030, when the optional DABK-7031 is installed)

An error has occurred on the digital I/O circuit board.

Error Code 4-

Error code	Meaning	Error level
4-02	The data bus is in error.	4

When the display reads "Error 5-**" (when the optional DABK-7030 is installed)

An error has occurred on the time code reader/generator circuit board.

Error Code 5-

Error code	Meaning	Error level
5-02	The data bus is in error.	4

When the display reads "Error 6-**" (for PCM-7030, when the optional DABK-7032 is installed)

An error has occurred on the memory start circuit board.

Error Code 6-

Error code	Meaning	Error level
6-01	The address bus is in error.	4
6-02	The data bus is in error.	4
6-04	The RAM (random-access memory) is in error.	4

When the display reads "Error 7-**" (for PCM-7050, when the optional DABK-7055 is installed)

An error has occurred on the edit memory circuit board.

Error Code 7-

Error code	Meaning	Error level
7-01	The address bus is in error.	4
7-02	The data bus is in error.	4
7-04	The RAM (random-access memory) is in error.	4

When the display reads "Error 8-**" (when the optional DABK-7033 is installed)

An error has occurred on the RS-232C interface board.

Error Code 8-

Error code	Meaning	Error level
8-02	The data bus is in error.	4

When the display reads "cAution 1-**"

A system control circuit board error has occurred.

Error Code 1-

Error code	Meaning	Error level
1-01	The playback tape main ID is illegal and the output signal is muted.	1
1-02	The playback tape sub-ID is illegal.	1
1-10	The servo was unlocked during recording and the unit came to a stop.	2
1-11	The digital audio input signal is in error during recording.	2
1-12	Recording is interrupted because you attempted to record audio/sub-code data in insert mode to a blank part of the tape is impossible.	2
1-20	The tape has reached its beginning or end during locate function execution.	2
1-21	Searching of points on a tape is interrupted because program numbers are out of sequence. Reunmber the Program numbers.	2
1-22	Locating of a point on a tape is interrupted because the time code is not consecutive and time code is not recorded at the desired locate point.	2
1-30	Preview, auto edit, or spot erase is interrupted because the time code is not continuous or is not recorded properly.	2

Note

When you connect the PCM-7050/7030 to the RM-D7300 Digital Audio Editor and the RM-D7300 software version number is 1.0, "cAution 1-30" on the PCM-7050/7030 may disappear. When the RM-D7300 software version number is 2.0 or higher, the warning is displayed on the RM-D7300.

When the display reads "cAution 2-**"

A servo circuit board error has occurred.

Error Code 2-

Error code	Meaning	Error level
2-01	The unit is in the adjustment mode.	3

7-3. Flashing Indicator Warnings

If there is any erroneous connection or data setup, the unit cannot function normally. If such an abnormal condition exists, the associated indicator on the display flashes off and on for warning purposes. This section describes such warnings given by flashing indicators.

Flashing Indicator Warnings

Flashing indicator	Description/remedy	See pages ......
TIME CODE	Although the "TC BASE" of the setup menu is set to "TC," no professional time code (SMPTE/EBU) is recorded on the playback tape. Therefore, change the TC BASE setting or record time code onto the tape.	See the section on "tc bASE (TIME CODE BASE)" (page 5-37).
TIME CODE ABS TIME	Although the "TC BASE" of the setup menu is set to "ABS TC," no absolute time (ABS TIME) is recorded on the playback tape. Therefore, change the TC BASE setting to TC. Also make sure that time code is recorded on the tape.	
EBU	Although the EBU time code format is selected, the received time code input is not in the EBU format. Make sure that the time code format selection agrees with that of the received time code.	See the section on "rEF tcF (REFERENCE TIME CODE FORMAT)" (page 5-39).
SMPTE	Although the SMPTE time code format is selected, the received time code input is not in the SMPTE format, or the drop-frame/non-drop frame selection for the SMPTE format disagrees with that for the received input (note that the unit does not distinguish between 30 Hz and 29.97 Hz). Make sure that the time code format selection is exactly the same as for the received input.	
SMPTE EBU	Although the film time code format is selected, the received time code input is not in the film format. Make sure that the time code format selection agrees with that of the received input.	
VIDEO	Although the front panel SYNC signal selector is set to the external video sync mode (VIDEO), synchronization is not effected by the video signal. During playback, the internal master clock is automatically selected, so that playback is possible. When recording, however, the unit cannot enter the record mode. Make sure that a video signal is received from outside, and that the frequency of the input video signal agrees with the frequency preset in the unit (when the optional DABK-7030 is installed).	————
EXT SYNC	Although the front panel SYNC signal selector is set to the external sync mode (EXT), synchronization is not effected by the word sync signal or AES/EBU format D-I sync signal. During playback, the internal master clock is automatically selected, so that playback is possible. When recording, however, the unit cannot enter the record mode. Make sure that a sync signal input is being received, and that the frequency of the sync signal input agrees with the frequency preset in the unit. Also make sure that the rear panel EXT SYNC selector position (WORD or D-I) agrees with the received sync signal input.	————

Flashing indicator	Description/remedy	See pages ......
D-I	When the AUDIO INPUT selector is set to DIGITAL and a digital audio signal is input to the unit: • The input digital audio signal frequency does not match the sampling frequency of the unit. When the unit is in variable-speed playback mode or in the playback speed control mode in chase or sync playback mode, the unit also displays "D-I". • The sampling frequency ID in the input digital audio signal does not match the sampling frequency of the unit. • The unit cannot receive the digital audio signal, because the PLL of the input digital audio signal circuit (DIO-10 board) is not locked. When you use an input digital audio signal, confirm that the unit synchronizes exactly with the input digital audio signal. If one of the above conditions occurs when you record the input digital audio signal in assemble or insert audio mode, "cAution 1-11" appears. When you are not using an input digital audio signal or when the "D-I" indication blinks for a short time in chase mode or sync playback mode, ignore the "D-I" indication.	——————
EXT TIME CODE	• Although the unit displays the input time code, no external time code is input to the unit. • Although the CHASE key is pressed to execute the chase function in accordance with time code, no time code signal is received from outside (when the optional DABK-7030 is installed). Therefore, start the master unit to input a time code signal. • When an attempt is made to record in assemble or insert subcode mode with the recording time code set to the input time code, no external time code signal input is received. Therefore, input a time code signal or set the recording time code selector to the internal generator setting.	——————
EXT U-BIT	Although the unit displays the input user bit, no external time code is being input to the unit.	——————
44.1	Although the unit operates at a frequency of 48 kHz, the front panel SAMPLING FREQ selector setting or external sync signal sampling frequency is 44.1 kHz. Make sure that all the frequency settings are equal.	——————
48	Although the unit operates at a frequency of 44.1 kHz, the front panel SAMPLING FREQ selector setting or external sync signal sampling frequency is 48 kHz. Make sure that all the frequency settings are equal.	——————
ASSEMBLE, INSERT AUDIO, INSERT SUB	An attempt to start recording has failed because recording mode setup is not completed. Therefore, press an appropriate record mode select key.	——————
WIDE	When the unit starts recording, chase synchronization or sync playback, the lock range (SYNC NARROW) in the set up menu is set to OFF (WIDE).	See the section on "SYnc nrr (SYNC NARROW)" (page 5-44) and the section on "SYncPb (SYNC PB)" (page 5-70).
SYNC PB	An attempt to start recording (including writing/erasing Start ID) has failed because the phase of the playback time code has not synchronized with that of the input video signal yet. Start recording after both phases are locked to each other (after the SERVO indicator lights up). To start recording, press the PLAY key while holding the REC key down.	——————
VARI SPEED	The unit records at a speed that may be varied by ± 0.2%.	See section "4-3-2. Controlling the Recording Speed— Variable-Speed Recording" (page 4-46).
Time code area in the display ** F	The frame value of the R-TIME or ABS TIME recorded on the tape is invalid. Record the time code again in subcode insert mode or copy the time code in assemble mode, thus recording the correct time code.	——————

If you commit any operating error or attempt to perform an illegal operation, the associated warning appears on the display. If such a warning is displayed, redo operations properly.

Operating error warnings

Displayed warning	Comment
-- iLLE GAL -- (ILLEGAL)	The pressed key is inoperative. Perform correct operating procedures. Typical illegal operational attempts are: • An attempt is made to record while the REC INH indicator is lit. • An attempt is made to change the recording mode setup during playback. • The MEMORY START key is pressed during playback. • The START ID WRITE key is pressed while the unit is in the stop mode.
-- not LocAL -- (NOT LOCAL)	A tape transport control key is pressed when the REMOTE (9P)/LOCAL selector is placed in the REMOTE (9P) position. To operate the keys on the unit, set the selector to LOCAL.
-- bot -- (BOT)	An acronym for "Beginning Of Tape". This warning is displayed if an attempt is made to run the tape backward in the cue mode or activate the REW key when the tape is already at the beginning.
-- Eot -- (EOT)	An acronym for "End Of Tape". This warning appears if an attempt is made to forward the tape in the cue mode or the PLAY key, FF key, or REC+PLAY key (simultaneous pressing of the REC and PLAY keys) is pressed when the tape is already at the end.
dur too SHort (DURATION TOO SHORT)	The duration between the edit-in and -out points is too short. Make the duration more than 5 frames or record in sync recording mode. The limits on the duration are: • **Monitor recording mode:** More than 5 frames • **Sync recording mode:** No restriction

Appendix

Specifications

General

Power requirements	100 V/120 V/220 V/240 V AC (±10%), selectable, 50/60 Hz
Power consumption	50 W
Operating temperature	5°C to 40°C (41°F to 104°F), function guaranteed
	10°C to 35°C (50°F to 95°F), performance guaranteed
Operating humidity	20% to 90%, function guaranteed
	30% to 70%, performance guaranteed
Storage temperature	−20°C to +55°C (−4°F to +131°F), without moisture condensation
Weight	15 kg (33 lb 1 oz)
Dimensions	424 × 132 × 474.5 mm (w/h/d) (16³/₄ × 5¹/₄ × 18³/₄ inches)

Digital audio input and output section

Number of record channel	2 channels
Sampling frequency	48 kHz/44.1 kHz, selectable
Quantization	16-bit linear (each channel)
Error correction	Double-encoded Reed Solomon code
Modulation system	8-10 modulation

Tape recording section

Format	IEC digital audio tape cassette system DAT for professional use
Head	Rotary head (4-head) Head height difference between a pair of heads (leading and trailing heads): 4.5 T
Drum rotation	2,000 rpm (standard recording/playback)
Tape speed	8.15 mm/sec. (standard recording/playback)
Relative tape speed	3.133 m/sec.
Track pitch	13.6 μm
Tape	Digital audio tape
Recording time	120 minutes (with tape type PDP-120)

Mechanical section

Tape playback speed variable range	±12.5%
Fast-forward/rewind	Within 60 seconds (with tape type PDP-120)
Rise time	0.8 seconds or less (standby ON) 1.5 seconds or less (standby OFF)
Searching speed	150 times max. normal playback speed
Cuing speed	±$\frac{1}{5}$, ±$\frac{1}{2}$, ±1, ±3, ±8, ±16 times normal playback speed
Locating accuracy	Within ±3 frames
Chasing accuracy	Within 0.4 milliseconds

External sync section

Word sync signal frequency	(For PCM-7030: when the optional DABK-7031 is installed) 44.1 kHz/48 kHz (within ±100ppm or ±12.5% (WIDE mode))
Video sync signal frequency (when a DABK-7030 is installed)	Within ±100ppm
Direction of synchronization	Word sync: both directions Video sync: input direction

Input/output section

Analog audio input	Reference level: +4 dBs Maximum level: +24 dBs Impedance: 10 kilohms/600 ohms, balanced/unbalanced Connector: XLR-3-31
Analog audio output	Reference level: +4 dBs Maximum level: +24 dBs Impedance: below 50 ohms, balanced/unbalanced Connector: XLR-3-32
Digital audio input	(For PCM-7030: when the optional DABK-7031 is installed) Format: IEC 958 digital audio interface (AES/EBU) (with transformer) Impedance: 110 ohms, balanced Connector: XLR-3-31
Digital audio output	(For PCM-7030: when the optional DABK-7031 is installed) Format: AES/EBU (with transformer) Impedance: 20 ohms, balanced Connector: XLR-3-32

Time code input (when a DABK-7030 is installed)
Format: IEC 461 (SMPTE/EBU)
Rated level: 0.5 to 10 Vp-p (at 10 kilohms)
Connector: XLR-3-31

Time code output (when a DABK-7030 is installed)
Format: SMPTE/EBU
Rated level: 2.4 Vp-p, load impedance 600 ohms
Connector: XLR-3-32

Monitor output
Reference level: –20 dBs
Connector: phone jack
Impedance: 150 ohms

Headphones output
Reference level: –26 dBs + –26 dBs (load impedance 8 ohms)
Connector: stereo phone jack

Word sync input
(For PCM-7030: when the optional DABK-7031 is installed)
Format: 50% duty
Level: TTL compatible
Impedance: 75 ohms, unbalanced
Connector: BNC type

Word sync output
(For PCM-7030: when the optional DABK-7031 is installed)
Format: 50% duty
Level: TTL compatible
Impedance: 75 ohms, unbalanced
Connector: BNC type

Video sync input (when a DABK-7030 is installed)
Format: NTSC/PAL/SECAM or 50 Hz/60 Hz rectangular wave
Level: 0.3 to 4 Vp-p (rectangular wave: 0.3 to 5 Vp-p)
Impedance: 75 ohms, unbalanced
Connector: BNC type

9-pin serial remote
Format: serial
Level: RS-422
Connector: D-SUB 9-pin (female)

37-pin parallel remote
Format: parallel
Level: TTL compatible
Connector: D-SUB 37-pin (female)

8-pin parallel remote
Format: parallel
Level: TTL compatible
Connector: DIN 8-pin (female)

Computer interface (when a DABK-7033 is installed)
Format: serial
Level: RS-232C
Connector: D-SUB 25-pin (female)

Audio section

Frequency response	20 Hz to 20 kHz ±0.5 dB
Signal-to-noise ratio	More than 90 dB
Total harmonic distortion	
	Less than 0.05% (at reference level)
Crosstalk between channels	
	More than 80 dB at 8 kHz
Emphasis	15 μsec./50 μsec.
Phase difference between channels	
	Within 10° (20 kHz)
Signal delay time	About 135 milliseconds (RAW mode)

Design and specifications are subject to change without notice.

Recording Format of the DAT

To record and play back the digital signal converted from the analog signal, you need a recording/playback system that ensures the frequency range within a few megahertz. Since this is very difficult for the conventional stationary head system, the DAT deck has adopted a helical scan system with rotary heads that provides fast relative tape speed. In addition, the DAT uses metal tape. These factors provide a density recording of 114 Mbit/inch^2. The PCM-7050/7030 employs a 4-head system with the tape wrapping around 90° for smooth and stable tape transport.
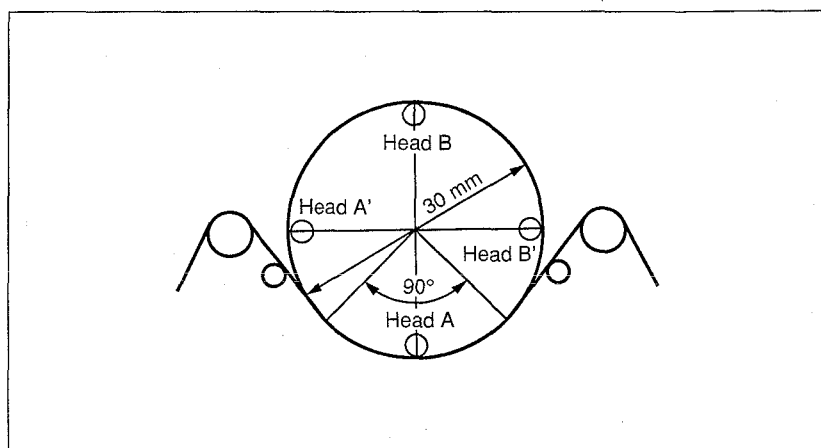
4-head drum

The tape format of a DAT and construction of a DAT cassette is illustrated below. Although the width of the tape is the same as conventional audio cassette tape, the tolerance is very strict, as much as +0/–0.02 mm.

The cassette shell has a sealing mechanism to prevent contamination of the tape.
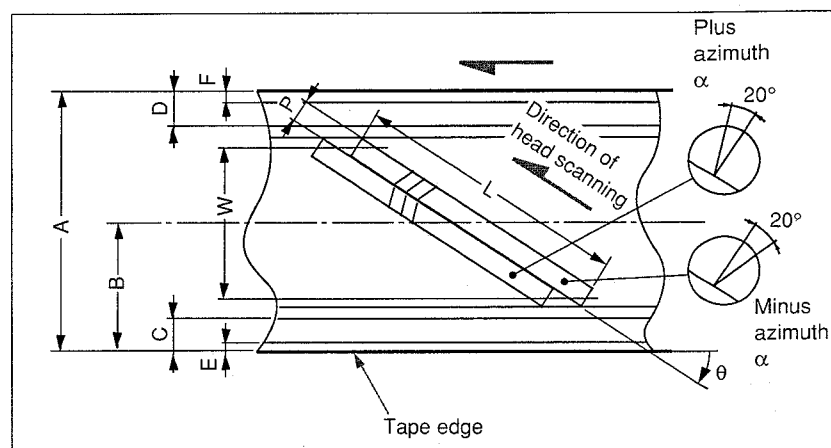
Tape format

Tape format of DAT

		48 kHz mode, 44.1 kHz mode	44.1 kHz wide track mode (for contact printing)
A	Tape width (mm)	3.81 (+0, –0.02)	
W	Width of recording area (mm)	2.613	
L	Track length (mm)	23.501	23.471
P	Track pitch (µm)	13.591	20.41
B	Track center (mm)	1.905	
C	Optional track 1 (mm)	0.5	
D	Optional track 2 (mm)	0.5	
E	Edge guard 1 (mm)	0.1	
F	Edge guard 2 (mm)	0.1	
Ø	Track angle (degrees)	6° 22'59.5"	6° 23'29.4"
α	Head gap azimuth angle (degrees)	±20° (±15')	

Tape format of DAT

Note: With Ø30 (mm) head drum, wrap angle is 90.0°, and still angle is 6°22'.

A-6
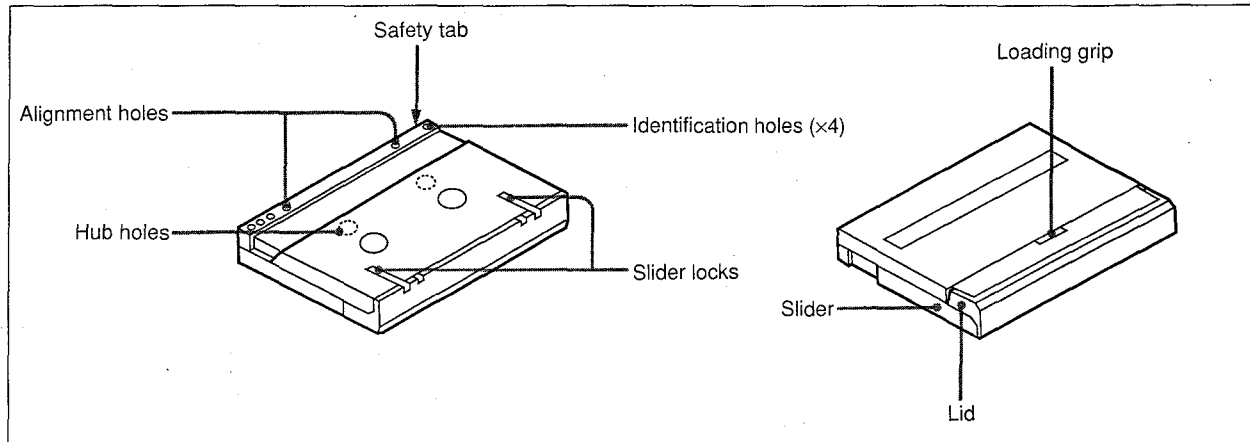
Construction of a DAT cassette

Construction of a DAT cassette

A DAT can record various kinds of information in addition to the audio signal as illustrated below. Since the information, such as subcodes are recorded in different areas, it does not affect the audio signal, and enables post-edit recording of the data without erasing the audio signal.
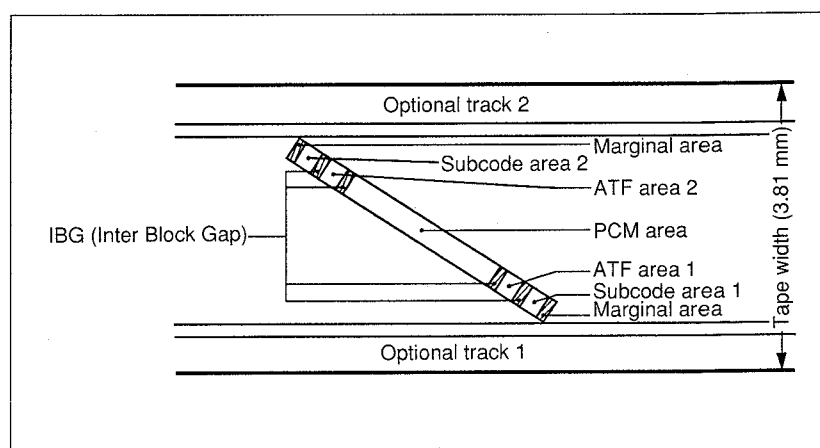
Track format

Marginal areas

These areas are located on both margins of the tape for stable contact between the tape and the rotating head. No data is recorded in these areas.

Subcode areas 1 and 2

Subcodes (such as Start ID, and time code) are recorded in these areas. These data are recorded in two areas to avoid burst error, and for easier access during high speed search. The capacity of these areas is about four times that of a compact disc, and it contains many possibilities for the future.

ATF (Automatic Track Finding/Following) areas 1 and 2

The signal for tracking (ATF signal) is recorded in these areas, enabling a stable tracking performance of the rotating heads.

A-8

IBGs (Inter Block Gaps)

These gaps are provided on both sides of each ATF area so that the ATF signal is not affected by unstable tracking by the heads in the insert mode.

PCM area

The digital audio signal is recorded in this area. In addition to the signal, Main IDs containing the data for sampling frequency, parity bit, etc., are recorded together here.